Attachment 1 - RSU assessments of BTSGT Limited water take RM19.151 to take water from the Royal Burn and New Chum Creek, Pete Ravenscroft, 13 June 2019

Document Id: A 1247273

MEMORANDUM

To: Alexandra King

From: Pete Ravenscroft

Date: 13/6/201

Re: RSU assessments of BTSGT Limited water take R.M 19.151 to take water from the Royal Burn and New Chum Creek

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Background

This application seeks to replace several Deemed permits as described in Table 1 below. Water taken from the Royal Burn North Branch serves both properties and hence a joint resource consent application is being made. This application does not seek to replace any shares held in the name of Glencoe Station Limited (shaded grey)

Table 1: Deemed Permits to be replaced

Number	Holder	Share
RM14.364.01 – to take water as primary allocation from the Royal Burn North Branch at a maximum rate of 55.6 L/s	G Coutts, R Coutts and S L Anderson being Trustees of the Barley Station (Glencoe) Trust	100%
96285 – to take 50,000 L/hr from the Royal Burn North Branch (13.9 L/s)	Glencoe Station Ltd	20% (10,000 L/hr)
	G Coutts, R Coutts and S L Anderson being Trustees of the Barley Station (Glencoe) Trust	80% (40,000 L/hr)
3073B – to take 48,000,000 L/month from the Royal Burn North Branch at a maximum rate of 400,000 L/hr (111.1 L/s)	A P McQuilkin, N J McQuilkin, R N Wilson and G M Todd being Trustees of the A P McQuilkin Family Trust	100%
97029.V1 – to take 56,000,000 L/month from the Royal Burn North Branch at a maximum rate of 200,000 L/hr (55.6 L/s)	G Coutts, R Coutts and S L Anderson being Trustees of the Barley Station (Glencoe) Trust	79.9%
	P C Little and G Coutts being Trustees of the Barley Station Trust	20.1%
95696 – to take 300,000 L/hr from New Chums Gully (83.3 L/s)	Glencoe Station Ltd	20% (60,000 L/hr)
	BSTGT Ltd being Trustees of the Barley Station (Glencoe) Trust	80% (240,000 L/hr)

The application is proposing that all of the above allocation to be rolled into one permit with three points of take as well as reduce their allocation, details provided in Table 2.

Table 2: Current Allocation and Allocation Sought

Location	Permit	Primary allocation currently held by applicants	Primary allocation sought
Upper RBNB	96285	11.1 L/s *Same point of take as RM14.364.01*	15 L/s
	RM14.364.01	55.6 L/s *Same point of take as 96285*	
Lower RBNB	97029.V1	55.6 L/s *Same point of take as 3073B*	100 L/s *Only 20 L/s of will be allocated to McQuilkin going forward*
McQuilkin share	3073B	111.1 L/s *Same point of take as 97029_V1*	
New Chums Creek	95696	66.7 L/s	45 L/s
		TOTAL	**160 L/s**

Figures 1,2,3 and 4 and Tables 3,4,5 and 6 provide the results of the rates of water taken for the Consents outlined in Table 2.

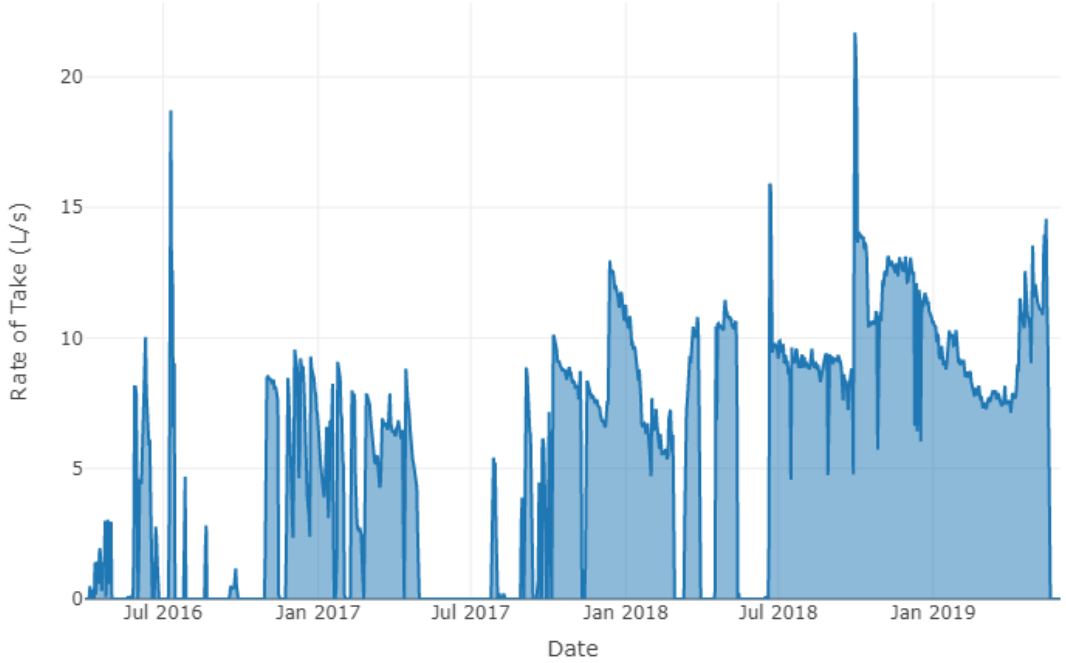


Figure 1 Water take data for Consent No. RM 14.364.01 and 96285; Water meter No.1202

Table 3 The percentage of take for Consents No's RM 14.364.01 and 96285

Name	min	lowerquartile	mean	median	upperquartile	ninetyfifthpercentile	max
WM1202	0	0	5.43	6.64	9.17	12.4	25.1

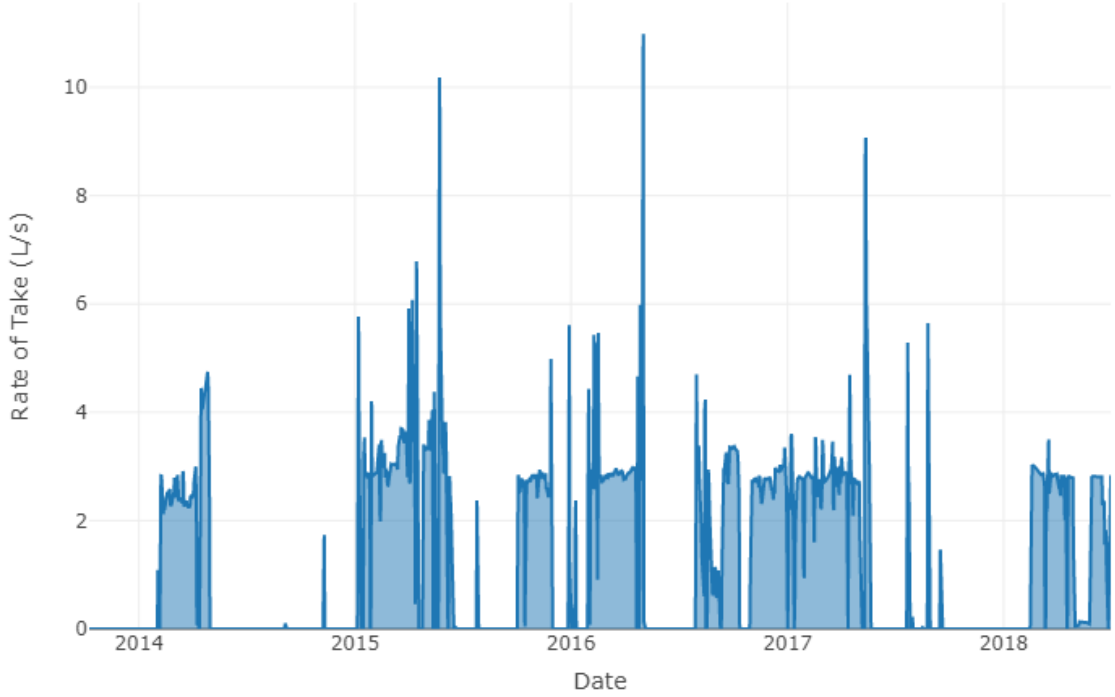


Figure 2 Water take data for Consent No.3073B; Water meter No.0503

Table 4 The percentage of take for Consents No 3073B

Name	min	lowerquartile	mean	median	upperquartile	ninetyfifthpercentile	max
WM0503	0	0	1.22	0	2.78	3.47	19.9

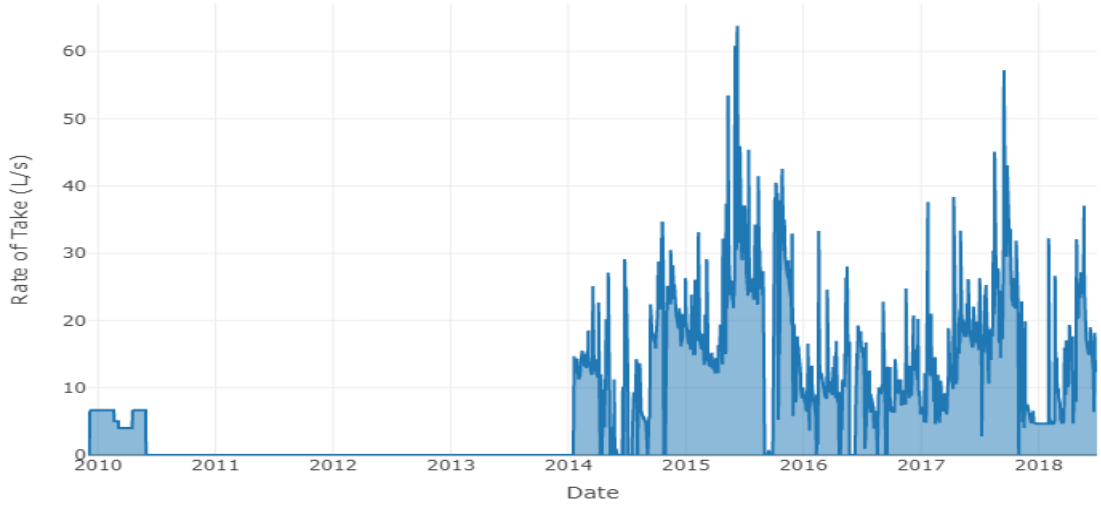


Figure 3 Water take data for Consent No.97029.V1; Water meter No.0385

Table 5 The percentage of take for Consents No. 97029.V1; Water meter No.0385

Name	min	lowerquartile	mean	median	upperquartile	ninetyfifthpercentile	max
WM0385	0	6.67	13.6	12.3	18.3	31.8	108

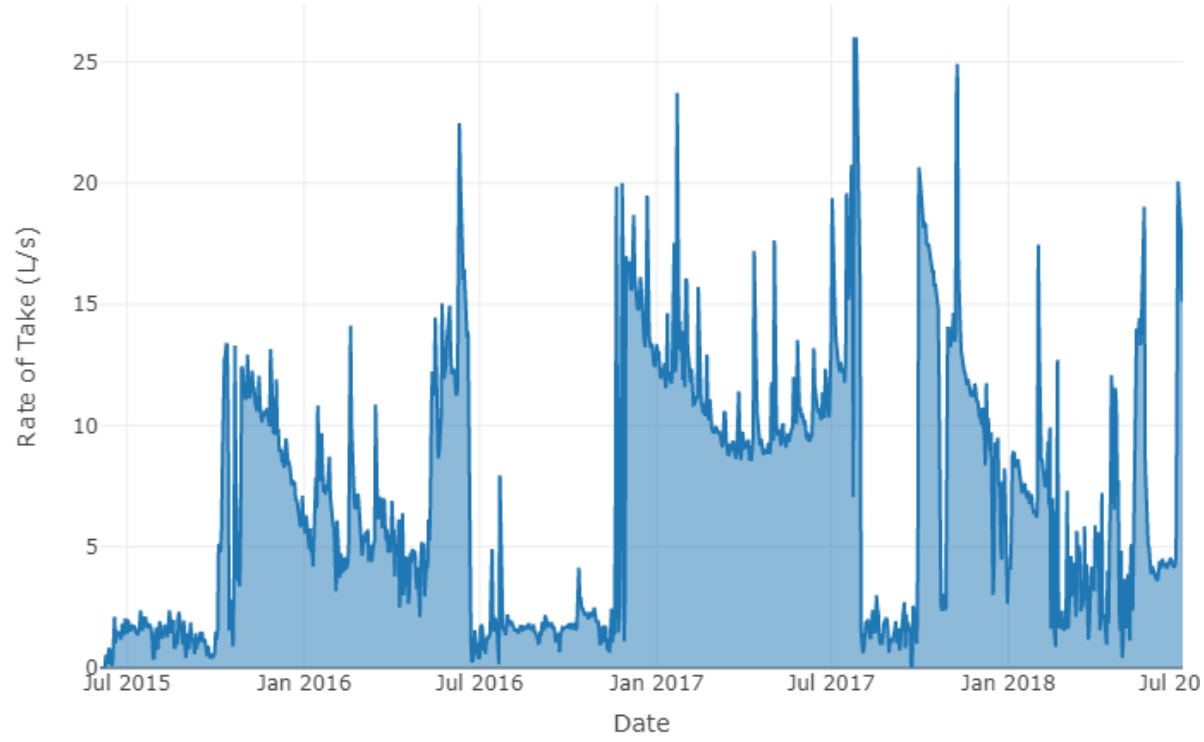


Figure 4 Water take data for Consent No.95696

Table 6 The percentage of take for Consents No.95696 and Water No.0733

WM0733	0	1.9	6.96	6.01	11	17.2	73.2
Name	min	lowerquartile	mean	median	upperquartile	ninetyfifthpercentile	max

Values

A search of the Zealand Freshwater Fish Database (NZFFD) indicates that there have been three surveys records conducted in the Royal Burn catchment. These records indicate the that no fish species occupy the waterways associated with this application. This survey was conducted in 2018, by Otago Regional Council (ORC) and the findings of no fish support a

previous survey that was completed by ORC in other waterways on the Crown Terrace. The surveys did reveal the presence of invertebrate's species from the Trichoptera, Emphemeroptera and Plecoptera families.

Schedule 1A of the Regional Plan: Water for Otago (RPW) outlines the natural and human use values of Otago's surface water bodies. Neither the Royal Burn or New Chums Creek are within this Schedule, however the Arrow River is identified as having the following values:

- Large water body supporting high numbers of particular species, or habitat variety, which can provide for diverse life cycle requirements of a particular species, or a range of species.
- Access within the main stem of the catchment through to the sea or lake unimpeded by artificial means such as weirs and culverts.
- Plant/boulder/gravel/sand/silt/rock bed composition of importance to resident biota.
- Absence of aquatic pest plants identified in the Pest Plant Management Strategy for the Otago Region.
- Absence of crack willow.
- Presence of significant fish spawning areas for trout
- Presence of significant areas for development of juvenile trout
- Significant presence of trout
- Also note outstanding natural features/landscapes areas with a high degree of naturalness.

Surface Water

There is no actual flow information available for the waterways associated with this application. The applicant has used the NIWA model, "Shiny". Shiny. Shiny uses modelled estimates based on national maps of MALF modelled by Booker & Woods (2014). These estimates are based on a machine-learning regression modelling method known as random forests regression. These are modelled numbers and should be used as a guidance, however, in the absence of flow information then they are suitable to be used in this situation.

The applicant has provided the following information:

New Chums Creek – Consent No.95696

"The head waters of New Chums Creek flow west off the Crown Range towards Mt Beetham, flowing from here north west, draining into the Arrow River. The confluence with the Arrow River is approximately 1 km upstream from Arrowtown. The Ministry for the Environment River Flow database estimates New Chums Creek to have a ***mean annual flow of 19.8 L/s*** *and a* ***MALF of 4.7 L/s****."*

Royal Burn North Branch – Consent No.'s RM14.364.01, 96285 and 97029, 3073B

"The northern branch of the Royal Burn (RBNB) runs west off the Crown Range and drains into the Arrow River approximately 3 km upstream from the confluence of the Arrow River with the Kawarau River and is therefore a sub catchment of the Arrow. The Ministry for the Environment River Flow database estimates the RBNB to have a ***mean annual flow of 33.7 L/s*** *and a* ***MALF of 10.7 L/s*** *upstream of the upper point of take.*

The two points of take on the Royal Burn were visited on the 31st January 2018. The RBNB was gauged above the upper point of take (associated with RM14.364.01 and 96285). Flow was estimated at 13 L/s, and therefore the conditions on the day likely reflected low flow conditions based on the estimated MALF for this reach of the stream. During the site visit, < 5 L/s of water was observed downstream of the upper point of take. It is likely water that this was water seeping through the small weir structure at the upper point of take. The lower point of take (associated with 97029 and 3073B) was dry at the time of the site visit, which shows that the water seeping through the weir structure was disappearing to ground before reaching the lower point of take."

Overall, I agree with the flow statistics provided by the applicant, noting the limitations that come with a national scale model. I do note the downstream takes (97029 & 3073B) take on average twice the water of the upstream takes (RM14.364.01 & 96285). This is primarily driven by Consent No. 97029.V1 which on average takes 13.6l/s (Table 5).

Assessment

There are no known fish values or known threatened invertebrates within the waterways related with these water takes. The values that this assessment is considering is both instream invertebrates and the natural character of the waterways. The applicant acknowledges the abstraction rate sought exceeds the mean flow for both creeks, this is to take advantage of water harvesting opportunities during higher flows. This has the potential to exacerbate any effects, extending the frequency and the duration of the low flow events. Therefore, there is need to ensure that both invertebrates and the natural character of the waterways are maintained and residual flows immediately downstream of the points of take are required.

The applicant has recommended the following for New Chums Creek (Consent No.95696) ....." *a visible flow past the point of take at all times*". I support the rationale to justify this position.

The applicant proposes a similar residual flow condition as for Consent 95696 for the top take (RM14.364.01 & 96285) in the Royal Burn North Branch. However, the application recommends that no residual flows for the lower takes 3073B & 97029.V1. I support the residual flow condition for the top take of ....." *a visible flow past the point of take at all times*". However, there is still a need to provide downstream protection below the bottom take.

Recommendations

The effects of this activity are no more than minor providing the following conditions are adhered to.

- That all three points of take have to adhere to any future minimum flow on the Arrow River.

- Consent No.95696 has to maintain a connected visible flow immediately downstream of the point of take for a distance of no less than 50metres.

- Consent No's RM14.364.01 & 96285 has to maintain a connected visible flow immediately downstream of the point of take for a distance of no less than 50metres.

- Consent No's 3073B & 97029.V1 has to maintain a connected visible flow immediately downstream of the point of take for a distance of no less than 50metres

References

Regional Plan: Water for Otago (updated to 1 May 2014) ISBN 978-0-478-37675-3

Attachment 2 - LOFTS Water Ltd application for Certificate of Compliance

Form 1 – Application for Resource Consent

Otago Regional Council

This application is made under Section 88 of the Resource Management Act 1991 (RMA).

The purpose of this Form 1 and the relevant activity form(s) is to provide applications with guidance on information that is required under the Resource Management Act 1991. Please note that these forms are to act as a guide only, and Otago Regional Council reserves the right to request additional information or to reject the application as incomplete under Section 88 of the RMA if the provisions of the fourth schedule of the RMA are not provided (refer to page 6 of this form, which details these requirements).

PLEASE NOTE: You must have Adobe Acrobat Reader installed onto your computer to use this editable version, which you can download for free from the Adobe website. This form cannot be filled in on your internet browser. REMEMBER to save the form to your computer after completing then attach and send via email along with the other relevant application forms/information to consents.applications@orc.govt.nz. The form can also be printed and completed manually.

1(a). Applicant's details:

- The full names or Company name or Trust (including full names of all Trustees) of the consent holder who will be responsible for the consent and any associated costs.
- A resource consent can only be held by a legal organisation or fully named individual(s). A legal organisation includes a registered limited company, incorporated group or registered trust. If the application is for a Trust, the full names of all Trustees are required. If the application is not for a limited company, incorporated group or rust, then you must use fully named individual(s).
- All invoices will be made out to and sent to the applicant.

Full name(s): LOFTS Water Ltd

OR

Registered company:

OR

Trust (include all Trustees full names)

Postal address: c/- 44 Jeffery Rd, RD 1, Queenstown

Post code: 9371

and

Physical address: (not a PO Box number) 18 Jeffery Rd, Crown Terrace, Arrowtown

Post code: 9371

Phone number: Business: Private:

Mobile: [redacted]

Email address: [redacted]

Please provide a valid and clear email address. Otago Regional Council has adopted a paperless consenting process – therefore any correspondence including decision documents and consent (if granted) will be sent via email, unless you request a paper copy.

Please tick if you do not prefer contact by electronic means ☐

1(b). Key contact for applicant details (if applicable):

Only complete if the applicant consists of multiple parties (e.g. multiple consent holders, Trust etc). Please outline who the key contact for the consent will be, if granted:

Full name: Jef Desbecker

Phone number: Business: _____ Private: _____

Mobile: [redacted]

Email address: [redacted]

2. Consultant details (if applicable):

Contact person: _____

Company: _____

Phone number: Mobile: _____ Business: _____

Email address: _____

3. Consents required in relation to this proposal:

Water

- [x] Take surface water
- [ ] Take groundwater
- [ ] Divert
- [ ] Dam

Discharge onto or into:

- [ ] Land
- [ ] Water
- [ ] Air

Land use:

- [ ] Bore construction
- [ ] Bore alteration
- [ ] Activities in or on beds of lakes or rivers or floodbanks
- [ ] Disturbance of contaminated land

Coastal

- [ ] Activities in the coastal marine area (i.e. below mean high water spring tide)

Where you have indicated the type of consent that is required, you must complete the appropriate application form before your application can be processed. Application forms can be found on the Council's website: www.orc.govt.nz/consents/ready-to-apply-for-a-consent

4. For what purpose is/are the consent(s) required (e.g. gravel extraction, water for irrigation etc):

Domestic supply, stock supply

5. Location of proposed activity:

Address: 18 Jeffery Rd, Crown Terrace, Arrowtown

Legal description(s): Pt Lot 1 DP 409021 Lot 17 22 SO 423850

Map reference(s) (NZTM 2000): E 1274700 N 5011100

Please include location details on separate documentation if there are multiple sites or activities.

Note: Certificate(s) of Title less than three months old for the site to which this application relates are required.

6. Are there any current or expired Resource Consents relating to this proposal:

☐ Yes ☉ No

If yes, give consent number(s), description and expiry date(s):

(a) Do you agree to your current consent automatically being surrendered should a replacement consent be issued?

☐ Yes ☐ No

(b) Has there been a previous application for this activity that was returned as incomplete?

☐ Yes ☐ No

(c) Have you lodged a pre-application with Council for this activity?

☐ Yes ☐ No

(d) Have you spoken to a Council staff member about this application prior to lodging this application?

☐ Yes ☐ No

If yes, please state name of staff member:

7. What is the term of consent you are seeking and reason for this term:

Unlimited as this is continued domestic and stock supply for 9 existing properties OR 6 YEARS IF REQUIRED BY SECTION 10.A.2.2 OF PC 7

8. Territorial Local Authority in which activity is situated:

☐ Dunedin City Council
☐ Clutha District Council
☐ Central Otago District Council
☉ Queenstown Lakes District Council
☐ Waitaki District Council

9. Do you require any other resource consent from any local authority for this activity:

☐ Yes ☉ No

If yes, please give the date applied for or issued:

10. For the land on which the activity occurs, is the applicant (tick one):
If the applicant does not own the land to which this application relates, unconditional written approval from the land owner/affected party will be required.

- ○ The owner
- ○ The lease holder
- ◉ The occupier
- ○ Prospective purchaser

If the applicant is not the land owner, who is the owner of the land on which the activity occurs/is to occur:

Name of land owner: R M Bodle

Phone number: Mobile: [redacted] Business: _____

Email address: [redacted]

11. Site visit from the Consents Team:

Consents staff are able to meet with you, visit your site and see what you are proposing to do. We find that this is beneficial to everyone involved. The cost of the visit will be included in the total cost of processing your consent. However, we find that applications that have an on-site visit are processed with less congestion and at a similar or lesser overall cost. Please let us know below if you would like us to come and see your site.

I would like a member of the Consents Team to visit my site:

◉ Yes ○ No

12. How to pay:

A deposit **must** accompany this application (see **page 8** for amounts and ways to pay). The applicant will be invoiced for all costs incurred in processing this application that exceed the deposit.

If the required deposit does not accompany your application, staff will contact you on the email address provided on this form to request payment, and after 5 working days your application will returned as incomplete if no payment is made for the required deposit.

When paying online, please use the word '**Consent**' followed by the name of the applicant as a reference.

Method of payment:

- ◉ Online bank transfer
- ○ Credit card
- ○ Cheque
- ○ In person

Date of payment: _____

Amount paid: _____

Payment reference: _____

Please note: Your deposit may not cover the entire cost of processing your application. At the end of the application process you will be invoiced for any costs that exceed the deposit. Interim invoices may be sent out for applications, where appropriate.

Information regarding the average costs in processing various types of single non-notified consent applications can be found via the following link, scrolling down to "Costs to process the application": www.orc.govt.nz/consents/ready-to-apply-for-a-consent/fees-and-charges

Checklist

Before signing the declaration below, in order to provide a complete application have you remembered to:

- ☑ Fully complete this Form 1, including signed declaration
- ☑ Completed the necessary application forms relating to the activity
  Application forms can be found on Council's website via the following link:
  www.orc.govt.nz/consents/ready-to-apply-for-a-consent
- ☑ Payment of the required deposit (see page 8 for fees schedule)
- ☑ Written approvals from all potentially affected parties
  "Written Approval of an Affected Party" forms are available from Councils website
- ☑ An assessment of effects on the environment
- ☑ An assessment against the relevant objectives, policies and rules from Regional Council Plans, Regional Policy Statement (including proposed and partially operative versions), and relevant Regulations, National Policy Statements, National Environmental Standards and iwi management plans
- ☑ Site and location plans
- ☑ Certificate(s) of Title less than three months old for the site to which this application relates
  Certificates of Title can be obtained via the Land Information New Zealand website:
  www.linz.govt.nz

Declaration

I/we hereby certify that to the best of my/our knowledge and belief, the information given in this application is true and correct.

I/we undertake to pay all actual and reasonable application processing costs incurred by the Otago Regional Council.

Name(s): Jef Desbecker

Signature(s)*: _____

(or person authorised to sign on behalf of applicant)

* Ensure you use the "fill and sign" function of Adobe Acrobat when signing this form. Either draw your signature or add an image. Council cannot accept typed signatures.

Designation: manager

(e.g. owner, manager, consultant)

Date: 09/15/2020

Council can accept electronic lodgement of applications if sent to consents.applications@orc.govt.nz.

Alternatively, applications can be posted or delivered to:
Otago Regional Council
Private Bag 1954
70 Stafford Street
Dunedin 9054

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

R. W. Muir
Registrar-General
of Land

Identifier **545367**
Land Registration District **Otago**
Date Issued 06 January 2011

Prior References
433031 8672052.1

Estate	Fee Simple
Area	4.5801 hectares more or less
Legal Description	Part Lot 1 Deposited Plan 409021 and Section 17, 22 Survey Office Plan 423850

Registered Owners
Robina Mary Bodle, Anthony Paul Bodle, Nichola Anne Bodle Paterson and Graeme Morris Todd

Interests

Part Lot 1 DP 409021 formerly Section 106 Block VIII Shotover Survey District is subject to Section 315 Land Act 1924

Part Lot 1 DP 409021 formerly Section 129 Block VIII Shotover Survey District is subject to Section 59 Land Act 1948

Subject to a right to convey water over part Lot 1 DP 409021 marked L2 and L3 on SO 423850 and F-N, N-G and N-O on DP 409021, right to convey communications over part Lot 1 marked F-N, N-G and N-O on DP 409021, right to install pumps, well and convey water over part Lot 1 marked E on DP 409021, right to store water over part Lot 1 marked P on DP 409021, right to pump, store and convey water over part Lot 1 marked E on DP 409021 specified in Easement Certificate 780431 - 4.6.1991 at 9:01 am

Land Covenant in Deed 784603 - 30.7.1991 at 10.43 am (Affects part Lot 1 DP 409021)

Subject to a right to convey communications and water over part Lot 1 DP 409021 marked F-N, N-G and N-O on DP 409021 right to pump, store and convey water over part Lot 1 marked E on DP 409021 , right to store water over part Lot 1 marked P on DP 409021specified in Easement Certificate 811313.3 - 5.8.1992 at 9:13 am

Appurtenant to part Lot 1 DP 409021 is a right to convey water and telecommunications, appurtenant to part of Lot 1 formerly Part Lot 4 DP 21340 is a pump water, store and convey water and appurtenant to part of Lot 1 formerly Lot 1 DP 22670 is a store water easement specified in Easement Certificate 811313.3 - 5.8.1992 at 9:13 am

Subject to Section 120(9) Public Works Act 1981

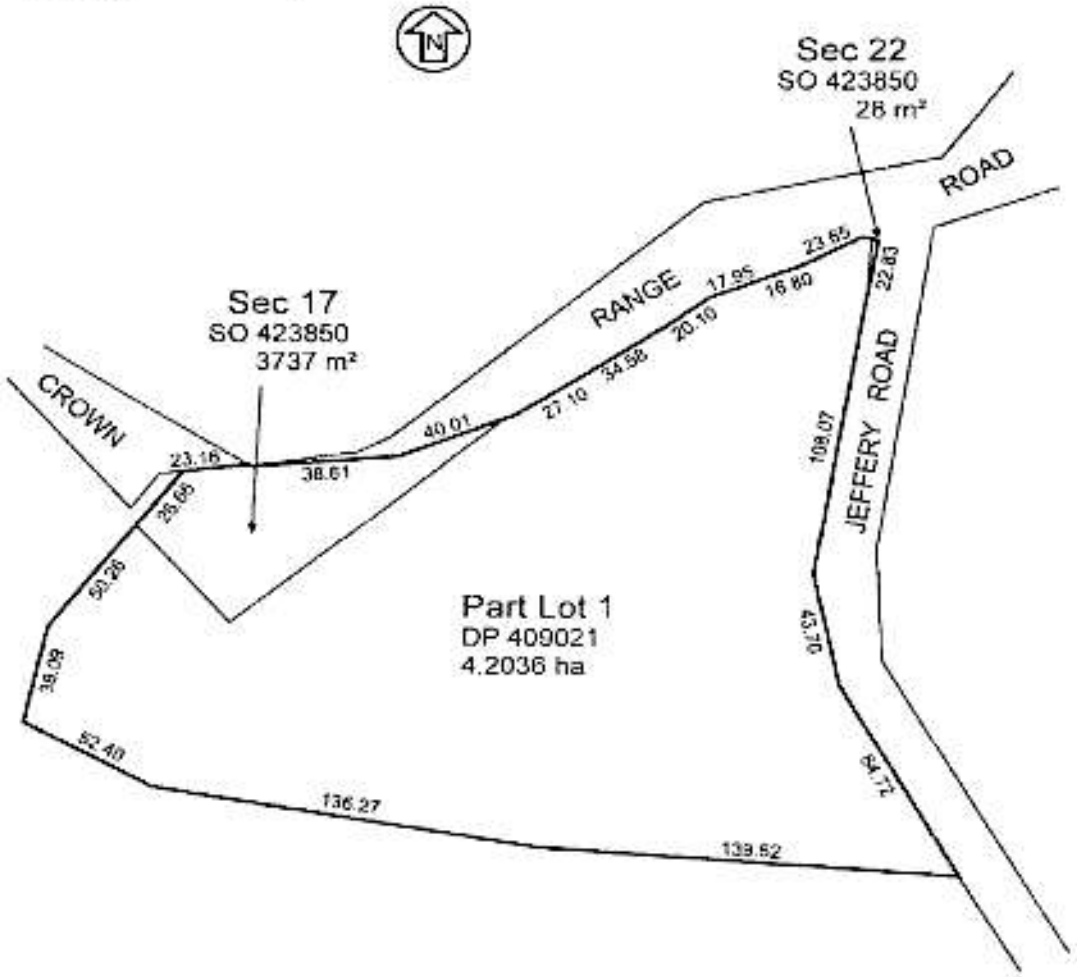
Land Covenant in Easement Instrument 10180960.10 - 17.9.2015 at 12:35 pm

Identifier **545367**

Title Diagram Title Dia

CT 545367

C2011/012



TOTAL CT AREA: 4.5801 ha

For further dimensions
see SO 423850

Robina Mary Bodle
[redacted]

25th September 2020

E: [redacted]
C:

TO WHOM IT MAY CONCERN

As owner of 18 Jeffery Road, legally known as PT LOT 1 DP 17 22 50 423850, I have allowed, and will continue to give permission to LOFTS Water Ltd water scheme, to occupy my land and have access at any time for any reason to operate, maintain and monitor the water scheme.

Any further questions with regards to this please do not hesitate to contact me.

Regards

Robina Mary Bodle

RM Bodle

Rates Assessment/Invoice

TAX INVOICE GST No. 51-688-775

Otago Regional Council

[redacted]

Assessment number: 135384
If you require a 6 digit number for internet banking please enter zeros in front of the assessment number.

Invoice date: 1 September 2020
For the financial year: 1 July 2020 to 30 June 2021
Property details: 18 Jeffery Rd, Queenstown Lakes District

Capital Value: 1,000,000
Land Value: 950,000
Land Area: 4.5801 Ha
Valuation Ref: 2907211424

TOTAL DUE 31 October 2020 $191.84

If you would like to set up a direct debit for this account go to: www.orc.govt.nz/rates before 30 September 2020 to ensure your rates are paid on time. To find out more about what your rates go towards, head to www.orc.govt.nz/rates

Legal description PT LOT 1 DP 409021 LOT 17 22 SO 423850

Description of rate and class	Factor	Area/value	Rate	Rates charged
General Rate	CV	1000000	0.00008711	$87.11
Uniform Emergency Management Rate	Fixed			$27.18
Uniform General Charge	Fixed			$28.57
Uniform Targeted Wilding Trees Rate	Fixed			$2.15
River Management	CV	1000000	0.0000073	$7.30
Rural Water Quality	CV	1000000	0.00003953	$39.53

Arrears balance at 30th June	Rates levied	Penalties added	Payments	Credits/adjustments	Balance due
$0.00	$191.84	$0.00	$0.00	$0.00	$191.84

THIS NOTICE INCLUDES GST OF: **$25.02**

Does not include payments after 13/08/2020

A 10% penalty will apply to all amounts owing that remain unpaid on 1 November 2020.

Late arrival of your payment for this account due to incorrect addressing or postal service timing is not the responsibility of Council. Post in time to avoid a penalty.

REMITTANCE ADVICE (See reverse for payment options)

Please detach and return this portion with your payment

Assessment no: 135384
Valuation ref: 2907211424
Ratepayer: Robina Mary Bodle

Otago Regional Council

70 Stafford Street, Dunedin
Private Bag 1954, Dunedin 9054
Phone 0800 474 082
Email CustomerServices@orc.govt.nz
Office hours: Monday - Friday, 8:30am - 5pm

Due date	31/10/20
Amount due	$191.84
Amount paid	

135384 191.84 191.84

ORCAC 00135384005019184

⑈135384⑈ ⑈000000191841852

Otago Regional Council

Resource Consent Application Form 4

To take and use surface water

This application is made under Section 88 of the Resource Management Act 1991.

1. Note to applicants

The purpose of this form is to provide applicants with guidance on information that is required for your application under the Resource Management Act 1991. This form acts as a guide only and Otago Regional Council reserves the right to request additional information.

Please ensure that you fully complete this form **as well as** a fully completed resource consent application form (form 1) in support of your application, **and** preparation of an **Assessment of Environmental Effects** in terms of the Fourth Schedule of the Resource Management Act 1991. Failure to do so may result in Council rejecting your application, requesting further information, or publicly notifying your application, leading to delays in the processing of your application and potential increases in processing costs.

Please also note that Proposed Plan Change 7 (Water Permits) was publicly notified for submissions on 18 March 2020 and has immediate legal effect. PPC7 provides an interim regulatory framework for the assessment of applications to renew:

- *deemed permits expiring in 2021; and*
- *any other water permits expiring prior to 31 December 2025, the date by which the new Regional Land and Water Plan (LWRP) is expected to be operative.*

The plan change also establishes a requirement for short duration consents for all new water permits granted under the operative Water Plan rules.

Please ensure that your resource consent application is also made in accordance with the plan change. Failure to do this may result in Council rejecting your application, requesting further information, or publicly notifying your application.

Acceptance of your application for processing does not constitute a guarantee that water allocation is available.

2. General

2.1 This application is for (please tick any applicable box):

☑ A new surface water take

☐ An application to replace a current Water Permit

Water permit number: _____ *Expiry date:* _____

☐ An application to replace a Deemed Permit / Mining Privilege

Deemed permit number: ☐ *Expiry date:* ☐

2.2 A lapse period of 5 YEARS is sought. Provide reasons in application attached.

Note: This is the timeframe within which the consent must be given effect to. The default timeframe is 5 years after the date of commencement of the consent unless stated otherwise.

2.3 A consent term of 6 YEARS is sought. Provide reasons in application attached.

Note: This is the timeframe from the date of commencement of the consent which the consent will expire.

Please also note:

- *Proposed Plan Change 7 (Water Permits) establishes a requirement for short duration consents of no more than six years in accordance with Policies 10A.2.1 and 10A.2.2.*
- *If your application is for the replacement of a deemed permit or the take and use of surface water[1] that is the replacement of a take and use authorised by an existing water permit expiring prior to 31 December 2025, if the consent term sought in your application exceeds six years it will be considered as a non-complying activity in accordance with Proposed Plan Change 7 (Water Permits).*

2.4 Provide a map or coloured aerial photograph which outlines the following details (as applicable):

- ☑ The location of the existing and proposed point(s) of take and all associated infrastructure (including water races and point of discharge and re-takes)
- ☑ The location of the water measuring device(s) or system(s)
- ☐ The total property area boundary
- ☐ The area(s) to be irrigated (if relevant) by water applied for under this application
- ☐ The area of the community supply (if relevant)
- ☐ Distances to any discharge activities
- ☐ Other surface water bodies and wetlands, and distances from the point of take(s) to them
- ☐ The coastline and the distance to it (if relevant)
- ☐ The location of any dairy shed(s)
- ☐ The location of any known recreational activities, other water takes, areas of significance to iwi and areas where food is obtained from the water body.

2.5 Does the take hold a s417 certificate to confirm access of supply? If yes, please attach a copy.

- ☐ Yes
- ☑ No

[1] (including groundwater considered as surface water under policy 6.4.1A (a), (b) and (c)) of the operative Water Plan

3. Volume and rates of take applied for

3.1 Quantity and rate of take

Note: 1,000 litres = 1 cubic metre

a. Maximum rate of take: .2684 litres per second

b. Maximum monthly volume: 700 cubic metres per month

c. Maximum annual volume: 8465 cubic metres per year

*Note: Some deemed permits refer to hourly/weekly rates. Water permits are issued in litres per second, m^3 per month and m^3 per year. Should you wish to seek hourly or weekly rates **in addition** to those listed on the form, please provide this information including justification for any variances.*

3.2 Frequency of take

Note both the maximum and estimated average take.

	Average	Maximum
How many hours per day?	12	24
How many days per week?	7	7
How many weeks per month?	4	4

3.3 In your application describe the timing of your take, including which months of the year you expect to take water in both an average year and a dry year, and what part of the day the water take will generally occur.

3.4 In your application describe whether the take is from re-charge or is an augmented take, along with whether your activity provides re-charge back into the catchment.

3.5 In your application provide details of all takes and discharges (re-take / biowash).

3.6 If your application is to replace a deemed permit or an existing consent expiring prior to 31 December 2025, provide calculations in accordance with Schedule 10A.4 of Proposed Plan Change 7 (Water Permits) demonstrating whether:

The volume of water taken is no more than the average maximum of the daily volume limit, or monthly volume limit, or annual volume limit (whichever one or more are applicable) recorded during the period 1 July 2012 – 30 June 2017; and

The rate of take is no more than the average maximum rate of take limit recorded during the period 1 July 2012 – 30 June 2017

3.7 Storage

3.7.1 Do you intend to store your water before subsequent use?

- [x] Yes
- [ ] No

3.7.2 If yes, what/how much storage will be provided?

5m3 tank and 25m3 tank m^3

3.7.3 In your application outline the type of storage facilities that are proposed.

Note: You may need a building consent and/or additional resource consents for the construction of storage facilities. If the reservoir is in a water body or captures catchment runoff, you may require resource consents for damming and associated activities.

4. Point(s) of take description

4.1 What are the GPS coordinates of the point(s) you propose to take water from?

Note: if there are more than two points of take, please provide these details on a separate sheet.

CRC11

Point 1: NZTM 2000 E: 1274800 N: 5011400

Point 2: NZTM 2000 E: N:

4.2 Please provide photographs of the proposed point(s) of take ☐

4.3 What is the name of the water body/ies from which the proposed take(s) is/are to occur? *Note: if the water body is unnamed please note this and note the water body it flows into.*

Royalburn Creek

4.4 If the take is from a river, stream, spring, drain or modified water body, in your application please provide a full description of the water course, including:

- [x] The average channel width and depth at various locations including at the point of take and upstream and downstream of the point of take.
- [x] Average flow water velocity including source of flow data and any changes to flow velocity above and below the point of take.
- [x] Any flow gauging of the water body. A flow gauging report with photographs of the site and methodology to be attached.
- [x] Bed of the water body at the point of take and upstream and downstream of the point of take.

Please also answer the following:

4.4.1 What type of water body will the take/s occur from?

- [x] River
- [ ] Stream
- [ ] Modified water body
- [ ] Spring
- [ ] Drain

4.4.2 Is the water course perennial (flows all year round) or ephemeral?

- [x] Perennial
- [ ] Ephemeral

4.5 If the take is from a lake, pond or wetland please answer the following:

- [ ] Lake
- [ ] Pond
- [ ] Wetland

4.5.1 If the take is from a wetland, is the wetland classed as a Regionally Significant Wetland identified in Schedule 9 of the Regional Plan: Water for Otago?

- [ ] Yes (list the name and provide an assessment of effects on the wetland)

- [ ] No

4.5.2 Has the wetland been formed by artificial means?

- [ ] Artificial
- [ ] Natural

4.5.3 What is the surface area of the lake/pond/wetland?

4.5.4 How deep is the lake/pond/wetland?

4.5.5 Does the lake/pond/wetland have an outlet? i.e. does water flow out of it?

- [ ] Yes
- [ ] No

4.5.6 What is the main source of water that fills the lake/pond/wetland?

- ☐ Groundwater
- ☐ Springs
- ☐ Runoff from surrounding land
- ☐ Direct rainfall
- ☐ Stream/river (list name) _____
- ☐ Other (provide details) _____

5. Historical water use

5.1 Water abstracted over at least the last 5 years

Note: if you are applying to replace an existing water permit for primary allocation, or an existing deemed permit or mining privilege you must provide evidence of the amount of water abstracted under that permit for at least the last five years.

The following usage evidence is provided in support of this application:

- ☐ Water metering records, attached to this application with historical water use summarised and assessed
- ☐ Water metering records sent to Council electronically or recorded on file by Council with historical water use summarised and assessed
- ☐ Detail on alternative water use information, attached to this application

5.2 In your application please analyse and assess the historical volumes and pattern of water use based on the water use evidence. If your application is to replace a deemed permit or an existing consent expiring prior to 31 December 2025 please ensure this is also undertaken in accordance with Schedule 10A.4 of Proposed Plan Change 7 (Water Permits).

5.3 Provide a summary of your analysis below:

a. Average maximum rate of take: _____ litres per second
b. Average maximum daily volume: _____ cubic metres per day
c. Average maximum monthly volume: _____ cubic metres per month
d. Average maximum annual volume: _____ cubic metres per year

5.4 For which years have these rates and volumes been recorded? _____

6. Water use and management

6.1 For what purpose(s) will the water be used?

- [x] Stock water [redacted]
- [ ] Irrigation (provide detail of irrigation use in your application attached)
- [x] Community supply
- [ ] Commercial/industrial

Other

6.2 Will the water take be managed as part of an existing water allocation committee or water management group?

- [x] Yes (name of committee of group): LOFTS Water Ltd (community water scheme servicing 9 resident
- [ ] No

6.3 If yes, have you described how the allocation committee/management group operates in your application?

- [x] Yes
- [ ] No

6.4 In your application describe any water rationing regime that operates in the catchment. RESTRICTORS

6.5 Will the take applied for be operated in accordance with the rationing regime you have described in question 6.4?

- [x] Yes
- [ ] No

6.6 Will you or others "re-take" water from your take (i.e. via a water race)? If yes, please provide details of such re-takes in your application.

- [ ] Yes
- [x] No

7. Measuring and reporting

7.1 In your application describe the type of water metering system that is installed or proposed to be installed.

Note: If currently installed provide proof of installation or note if proof has already been provided to Council.

[redacted]

7.2 Provide information in your application demonstrating that the installation of the measuring device or system shall be undertaken in accordance with Council guidelines.

Note: If the installation is not able to meet these guidelines, you need to fill out and attach to this application form a Non-Standard Installation Form for Water Measuring Devices, available on our website or through the environmental services unit of the Council.

- [x] Tick if completed
- [ ] Tick if completing a Non-Standard Installation Form for Water Measuring Devices

7.3 Is your water measuring device or system installed or proposed to be installed at the point(s) of take?

Note: The council considers the point of take to be within a 100 metre radius of the physical take point. If your answer is No, you need to apply for a Water Measuring Exemption (WEX) by filling out Application Form 24 – Application for Exemption to use a device or system near the location from which water is taken. A fully completed Form 24 should be lodged at the same time as this application to enable dual processing.

- [x] Yes
- [x] No – complete an Application Form 24 – Application for Exemption

8. Location and Efficiency of Water Use

8.1 Provide details of point/area of use (include legal description(s) and grid references).

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

E 1274650 N 5011150

8.2 Provide a description of any existing works/infrastructure in place, including value, in your application.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

8.3 Provide a description of proposed works/infrastructure to give effect to consent sought, including value of investment, in your application.

☑ Yes (attached to application)

☐ No (please outline reasons why this has not been provided)

NO FURTHER WORKS REQUIRED

8.4 Provide an assessment of the proposed use against the AquaInc report for reasonable water requirements[2].

☐ Completed

☑ Not Completed (provide details of alternative assessment and justification for that)

not used for irrigation, only for domestic and small stock numbers

8.5 If you propose to use water to irrigate land, please outline:

a. How many hectares of land will be irrigated?

b. What is the soil type(s) of the land being irrigated?

c. What will you be irrigating (i.e. crop, pasture etc in ha)?

d. What is the target application rate (mm/day and mm/year)?

e. Will the total land area under irrigation exceed that irrigated in the 2017-2018 irrigation season?

8.6 What type of irrigation system is proposed to be used or is currently being used?

☐ K-line

☐ Centre pivot

☐ Travelling irrigator

☐ Border-dyke/flood irrigation

☐ Other – provide details

[2] *"Guidelines for reasonable irrigation water requirements in the Otago Region", AquaInc, 2017. Note that while this document provides a basis for assessing efficiency of use, other matters may be applicable.*

8.7 Do you have any water distribution infrastructure in place (for example pipes, storage tanks, open races etc.)?

☑ Yes

☐ No

If yes, in your application please describe the type of infrastructure in place and how you intend to ensure that it is maintained in good working order (e.g. do you intend to have a maintenance or leak detection programme, will the scheme be managed by an external company).

Note: For deemed permits please ensure you have the right to convey water under s417 of the Resource Management Act if that conveyance crosses another party's property, prior to the expiry of the deemed permit.

8.8 Do you intend to install any water distribution infrastructure (for example pipes, storage tanks, open races etc.)?

☐ Yes

☑ No

If yes, in your application please describe the type of infrastructure to be installed and how you intend to ensure that it is maintained in good working order (e.g. do you intend to have a maintenance or leak detection programme, will the scheme be managed by an external company).

Note: For deemed permits please ensure you have the right to convey water under s417 of the Resource Management Act if that conveyance crosses another party's property, prior to the expiry of the deemed permit.

8.9 If you propose to use water for stock and/or dairy shed use – please answer the following:

Note: The Council considers the following values as efficient use of water for stock:

Sheep	*5 litres per day per head*
Beef cattle	*45 litres per day per head*
Dairy cows	*70 litres per day per head*
Deer	*15 litres per day per head*
Dairy shed use	*50 litres per day per head*

8.9.1 What type of animal and numbers of stock will be supplied with water for drinking?

Sheep

Number: _____ Water required: _____ litres/head/day

Beef cattle

Number: _____ Water required: _____ litres/head/day

Dairy cows
Number: [ ] Water required: [ ] litres/head/day

Other
Number: [380] Water required: [6] litres/head/day

8.9.2 How much water do you require for your dairy shed?

[ ] litres/head/day

8.9.3 If you are seeking more water for stock and/or dairy shed use than that recommended by the Council please state why this is in your application.

Note: please provide the source of any data provided. Also include details of stock water transportation if relevant.

8.10 If you propose to use water for industrial use – in your application state what type of industry will be using the water and how will the water be used.

8.11 If you propose to use water for community/domestic supply – please answer the following:

a. For households, the number of households to be supplied: [9]

b. For camping grounds, the maximum number of visitors and staff per year: [ ]

c. For schools, the maximum number of students and staff per year: [ ]

d. For motel units, the number and expected occupancy: [ ]

e. Other uses (please describe): [ ]

8.12 For all uses, demonstrate in your application how have you calculated the amount of water you need?

Note: Please note that the Council will only grant volumes that have been assessed as efficient, and will assess the volumes sought for efficiency, taking into consideration the local climate, soils, and crop type.

[✔] Tick if completed.

8.13 In your application please describe any other sources of water available for the property. How much water is available and what it is used for.

8.14 In your application please describe any measures you are proposing to minimise wastage of water and maximise its efficient use.

9. Assessment of Environmental Effects

Note: Pursuant to Schedule 4 of the Resource Management Act, 1991, there are a number of matters that must be addressed by an assessment of environmental effects. These matters are listed in Form 1, with additional or specific matters relating to water permits are listed below.

9.1 Assess effects on surface and/or ground water hydrology.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided in your application)

9.2 Provide an independent ecological assessment/instream assessment of the water body and any connected waterbodies. It is recommended that all takes not from the main stem of a catchment have this assessment carried out.

Note: if your application is to replace a deemed permit or an existing consent expiring prior to 31 December 2025 and the duration sought is more than six years, this assessment is required to be carried out to satisfy Policy 10A.2.3(a) in Proposed Plan Change 7 (Water Permits).

- [ ] Yes (attached to application)
- [x] No (please outline reasons why an independent ecological assessment has not been undertaken in your application)

Our take is a 50mm pipe which lays in the creekbed. Thus, there is no decrease of volume in the creekbed.

9.3 Assess any physical effect on the locality, including any landscape and visual effect.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

9.4 Assess any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity of the point of take.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

9.5 Does the taking of water from the water body cause it to dry up during summer or does the water body naturally dry up downstream of the take?

- [ ] Yes
- [x] No

If Yes, your application should explain approximately how far downstream from your this occurs and in approximately which month in a wet year, average year and dry year this happens.

Note: Please discuss and attach any evidence to the application (e.g. photographs of water body downstream):

9.6 Assess effects on cultural values.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

9.7 Assess any effect on other water users or other human use values.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

9.8 Describe any positive effects from the take.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

9.9 Outline the mitigation you propose in your application. This should include a consideration of the following:

- [ ] Proposing any existing residual flow, minimum flow, or take cessation condition
- [ ] A new residual flow
- [x] Fish screening on water intakes
- [ ] Measures for management where there are low flows
- [ ] Flow sharing measures
- [ ] Whether base flow is necessary to maintain the water race
- [ ] Any other applicable measures

9.10 Outline if your instantaneous abstraction rate (litres per second) will be reduced by increasing the length of time over which water is taken.

☐ Yes (attached to application)

☑ No

9.11 Provide a description of any possible alternative water sources or methods for undertaking the activity and why these alternatives have not been selected.

☑ Yes (attached to application)

☐ No (please outline reasons why this has not been provided)

10. Consultation

10.1 Include evidence of any consultation undertaken for this application.

10.2 Identify persons affected by this application.

10.3 Which persons approval have been provided to the application (attach copies of approvals)?

Note: This may include (but not be limited to) consultation with adjoining landowners, other consent holders in the immediate area such as downstream permit holders, iwi (e.g. Te Rūnanga O Ngāi Tahu, Aukaha, Te Ao Marama Inc.), government departments/ministries (e.g. DOC), territorial authorities and recreational associations. To reduce costs and processing times, we recommended that written approval is obtained and submitted with the application for parties which may be affected. Such approval must be unconditional to avoid notification.

11. Statutory Assessment

Please note that in accordance with Schedule 4 of the RMA, you are also be required to provide an assessment against the relevant provisions of the following documents (if relevant):

☑ National Policy Statement for Freshwater Management.

☐ National Policy Statement for Renewable Electricity Generation.

☐ Resource Management (Measurement and Reporting of Water Takes) Regulations 2010.

☑ National Environmental Standard for Sources of Human Drinking Water.

☐ New Zealand Coastal Policy Statement.

- [x] Operative Regional Policy Statement 1998, Proposed Regional Policy Statement and Partially Operative Regional Policy Statement 2019.
- [x] Regional Plan: Water for Otago (including description of permitted activities and compliance with permitted activity standards; identification of Regionally Significant Wetlands and associated valves).
- [x] Proposed Plan Change 7 (Water Permits).
- [ ] Kai Tahu ki Otago Natural Resource Management Plan 2005.
- [ ] Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 (for takes from the south side of the Clutha River/Mata-Au)
- [ ] Any other relevant plan, proposed plan and any other relevant regulations.

Resource Consent application under Section 88 of the Resource Management Act 1991

to take surface water from the Royalburn Creek

by LOFTS Water Ltd

27 September 2020

This application seeks to provide currency, recognition, compliance, and legality of a surface water take from the Royalburn Creek which has been in operation since 1989 by LOFTS Water Ltd, an entity which provides domestic and stock water use for 9 properties on the Crown Terrace, Arrow Junction. The water scheme was originally established by the developers of the lifestyle land blocks, Arrow Farms Ltd. Once all the land parcels were sold, Arrow Farms was de-established, relinquishing operational duties of the water scheme to the owners of the land parcels. This was prior to 1991 and the establishment of the RMA.

After many years of operation by the 9 properties' owners, LOFTS Water Ltd was formed and registered with the NZ Companies Office in 2015, upgrades were made to the infrastructure of the water scheme, and regular maintenance and recording of water usage was undertaken. Due to ignorance on the part of the shareholders of the water scheme, it was not realised until recently that the take may not have been in compliance with one particular regulation of the Otago Regional Council. Thus, this application seeks to rectify that and bring the operation of the scheme into compliance with the ORC standards.

Part A - General

1. Otago Regional Council Resource Consent application forms 1 and 4 have been completed and accompany this application.

2. The intake, settling tanks, pump, water meter, overflow water return to the Royalburn, and header tank are all specified on easements registered on properties through which the Royalburn Creek flows. Easements: 780431, 811313.3

3. The settling tanks and pump shed are located on the property of 18 Jeffery Rd, Arrow Junction near the intersection with the Crown Range Rd. The header tank is located at the top of the highest point of 30 Jeffery Rd. (Figure 1)

Figure 1: LOFTS Water Ltd infrastructure

4. 10 allocations of 2,500 litres/day are registered to the 9 shareholders/directors of the LOFTS Water Ltd company (2 shareholdings are held by one of the shareholders). All 10 allocations are used for domestic use and one of these currently runs a small herd of deer. The deer have an additional source of water for their daily needs in addition to the water supplied by LOFTS Water Ltd.

5. Each of the 9 properties has a domestic holding tank on their property for water storage and firefighting requirements. All have a flow restrictor installed in their inlet line adjacent to their toby valve.

Part B – Description of the LOFTS Water Ltd water scheme

1. The intake is located in the Royalburn Creek (Figure 2) and the 50mm intake pipe is laid in the creekbed until it emerges to enter a series of 3 x 5000 litre settling tanks. Gravity provides the flow, the 50mm intake pipe reduces to 25mm, a flow limiting valve is installed just prior to the first settling tank and the flow is governed to allow just over 23,000 litres/day at a constant rate of .2684 litres/second to enter the settling tanks. (Figure 3)

Figure 2: LOFTS stainless steel intake screen

Figure 3: pump shed and 3 settling tanks

2. A Grundfos pump is located in a small insulated, heated shed, adjacent to the settling tanks, which pumps water from the third and final settling tank to a 25,000 litre header tank located on a high point on an adjacent property owned by one of the shareholders. The pump has a pressure switch shutoff which is activated when the ballcock in the header tank reads full. (Figure 4)
   2.1. Value (1989): Pump/pressure tank/fittings $4500
   2.2. Value (1989): Pump shed $3000
   2.3. Value (1989): 2800m alkathene pipe $3357
   2.4. Value(2019): 4 x tanks $8820
   2.5. Value (1989): associated works, miscellaneous $20,000

2.6. Total value (approx.): $40,000

3. Water is distributed to the 9 properties from the header tank by gravity. There is a water meter installed in the pipe immediately next to the pump so that we can regularly monitor usage of the water by the scheme in total. If the pump is not supplying water to the header tank, the third settling tank discharges overflow back to the Royalburn Creek through a 50mm pipe.

Figure 4: pump and water meter

4. LOFTS Water Ltd is a small community water scheme for domestic supply. As such, operational duties, repairs and maintenance, monitoring and seasonal checks are performed by the shareholders by verbal agreement when needed. When something needs to be done, a simple email or phone contact is the preferred method of notification.

Part C – Hydrology

1. The Royalburn Creek at the point of take has a Mean Flow of 76.23 litres/sec and a Mean Annual Low Flow of 25.34 litres/sec. These figures are derived from the Ministry of Environment River Flow database.

2. The LOFTS intake is set at .2684 litres/second which is .35% of the MF and 1.06% of the MALF. For this vicinity of the Otago District, ORC requires that any water take shall be less than 1.0 litres/sec and less than 25,000 litres/day. The LOFTS take is well within these limits.

3. As our intake water pipe has a substantial fish and debris screen attached to the pipe and is laid in the creek, there is no visible change in the flow. There is a short

distance of about 25 metres where the pipe exits the creek bed to service our water scheme before the overflow returns the unused water to the creek. With a take of 1.06% of the total MALF, there is no discernible visible change in the flow for the 25 metres of water diversion, even at the lowest flows of the year.

Figure 5: Typical bottom structure of Royalburn Creek (just upstream of take for clarity of photo)

4. Our system operates 'on demand' 24/7, but as all usage is for domestic supply and a small deer herd supply, there is virtually no demand through the times of day when people sleep.

5. All 9 properties using this water scheme have a water flow restrictor installed in their delivery pipe which limits the total possible usage of water in any 24-hour period to 24,000 litres, which is within the limits stated by ORC. There are 8 restrictors of 100 litres/hour capacity and 1 restrictor of 200 litres/hour.

6. There is a water meter installed in the pipework directly adjacent to the pump. In looking over the recordings of the past couple of years, the figures show an average total usage of about 10,000 litres/day.

Part D - Royalburn Creek

1. The North Branch and South Branch of the Royalburn Creek have a confluence 680 metres upstream from the LOFTS take.
2. There are at least 2 major seeps/swamps that feed the Royalburn Creek below the North & South branch confluence, 200-500 metres upstream from the LOFTS take.
3. Historically, neither the North nor South branch of the Royalburn Creek ever ran dry naturally, even at the driest times of the year (source: residents of 30+ years). Consequently, the Royalburn Creek at our point of take always has substantial flow.

4. The Royalburn Creek is a distinct geomorphological feature of the Crown Terrace that has been carving its course since the last glaciation period to create the defined and permanent watercourse that is clearly visible by the line of willows that it supports. It also obviously supports the forementioned wetlands through which it travels.
5. The Royalburn Creek is a typical NZ mountain stream that flows through wild and cultivated farmland after accumulating the waters and snowmelt from the high slopes of the Crown Range above. It has an average width of 1-2 metres and an average depth of 20-50 centimetres (Figures 5). The creek bed is a mix of gravels, rocks, silts, and mosses and the creek periodically rises in heavy rains to encompass the grasses, weeds, and willows that inhabit the riverbanks (Figure 6).

Figure 6: Royalburn width at intake and bank vegetation

6. There are numerous ecosystems, flora, fauna, etc that are dependent on the Royalburn Creek for their existence. As the creek passes through numerous properties, both before and after the LOFTS take, there is a visual amenity value to be considered. The LOFTS intake pipe screen is totally below the surface of the creek, secured to a steel stake (Figure 2), and the pipe is laid in the creek for the length of its travel (300+ metres) before exiting the creek bed for about 25 metres (buried in the

ground) until it rises to enter the first of 3 settling tanks. When the LOFTS pump is not operating to send water to the header tank, the full flow of water through the settling tanks is returned to the Royalburn Creek. There is a distance of about 20 metres where water actually leaves the watercourse and it must be remembered that the volume of water is between .35% and 1.06% of the total flow in the watercourse. Consequently, there is no detrimental effect to any part of the ecosystems, flora, fauna, or visual amenity due to operation of this take.

7. It must also be considered that this water scheme has been in operation for over 30 years and it is a fixture that is part of the watercourse environment.

Part E – Effects

1. The taking of water by the LOFTS Water Ltd water scheme does not cause any discernible change in the flow of the Royalburn Creek.
2. The LOFTS take does not cause the Royalburn Creek to dry up during summer nor does it ever dry up below the take.
3. There are no cultural value effects from the LOFTS Water Ltd take.
4. There is no effect on any other water users, either below or above the take, by LOFTS Water Ltd taking water from the Royalburn Creek.
5. There are 9 residential properties that benefit immensely from having reliable clean water delivered to their residence for domestic use…and one lifestyle deer farmer that augments his other water supplies to hydrate his animals.
6. Members of the LOFTS Water Ltd scheme take it upon themselves to regularly check the intake fish/debris screen to ensure it is clear. Members also regularly check the operation of the pump, shed heaters, header tank ball cock, and record the water meter reading.
7. When members of the LOFTS Water Ltd scheme purchased their properties, water was delivered to their boundary by the scheme. There has been no need to look for another source of water consequently no alternatives have been sought.
8. The 9 residential dwellings were granted their original building permits by QLDC on the basis of the potable water received from this scheme and for the majority of the houses on this scheme, LOFTS Water Ltd is their only source of water for domestic use.
9. The LOFTS Water Ltd scheme met all the criteria set out by the ORC when it was initially established.

Part F – Consultation

The infrastructure and associated works of the LOFTS Water Ltd water scheme is located on properties that are owned by shareholders of the scheme and has been in operation for over 30 years… there are no adversely affected persons, only persons that benefit.

Part G – Statutory Assessment

The LOFTS Water Ltd operation takes a minimal amount of water from the Royalburn watercourse, runs it through a closed system, and discharges unused water back into

the watercourse. There are no additives to the water, nor is there any detrimental effect to the watercourse due to this operation. The environment remains as is, the water level is virtually unchanged, there is no disturbance to the bed of the creek either at the intake or at the return.

Because of the low impact of the LOFTS Water Ltd operation, the operation as a whole is in line with the NPS for Freshwater Management, the NES for Sources of Human Drinking Water, the Operative Regional Policy Statement 1998, the Proposed Regional Policy Statement/Partially Operative Regional Policy Statement 2019, the Regional Plan: Water for Otago, and ORC Proposed Plan Change 7.

Other relevant plans, proposed plans and other relevant regulations are either not applicable or also in line with the operation of the LOFTS Water Ltd water scheme.

Attachment 3 - LOFTS Water Ltd Certificate of Compliance RM20.330

Our reference: A1403058

OTAGO REGIONAL COUNCIL

RESOURCE MANAGEMENT ACT 1991

SECTION 139 – CERTIFICATE OF COMPLIANCE

APPLICANT: LOFTS Water Limited

ADDRESS: C/- 44 Jeffery Road, RD1, Queenstown

REFERENCE NUMBER: RM20.330

SITE: **Location:**
Arrowtown, approximately 100 metres southwest of the intersection of Crown Range Road and Jefferey Road.

Grid Reference/GPS location:
NZTM 2000 E1274700 N5011100

Legal Descriptions:
Pt Lot 1 DP 409021, Section 17,22 SO 423850

1. Introduction

The applicant has requested a new Certificate of Compliance to take and use surface water from Royal Burn for communal domestic and stock water supply. The relevant plan is the Regional Plan: Water for Otago (RPW).

2. Relevant Rule

This activity is classified as a permitted activity under the Regional Plan: Water for Otago (RPW), provided it meets a number of conditions as listed in Rule 12.1.2.1. Rule 12.1.2.1 states:

> 12.1.2.1 The taking and use of surface water for domestic needs or the needs of animals for drinking water is a ***permitted*** activity providing:
>
> (a) No take is for a volume greater than 25,000 litres per day; and
>
> (b) No take is at a rate greater than 0.5 litres per second in the North Otago, Maniototo or Central Otago subregions (as identified on Maps A1-A8), or greater than 1 litre per second elsewhere in Otago; and
>
> (c) The taking or use does not have an adverse effect on the environment.

3. Details of the Activity for Which a Certificate of Compliance is Sought

The applicant is seeking endorsement that LOFTS Water Limited can lawfully take and use surface water from the Royal Burn for communal domestic and stock water supply.

4. Compliance With Permitted Activity Rule

<u>Compliance with Rule 12.1.2.1 of RPW:</u>

(a) No take is for a volume greater than 25,000 litres per day; and

The applicant's intake is located in the Royal Burn and the 50 mm intake pipe is laid in the bed until it emerges to enter a series of 3 x 5000 litre settling tanks. Gravity provides the flow, the 50 mm intake pipe reduces to 25 mm diameter, a flow limiting valve is installed just prior to the first settling tank and the flow is governed to allow just over 23,000 litres/day at a constant rate of 0.2684 litres/second to enter the settling tanks. As such requirement (a) is met.

(b) No take is at a rate greater than 0.5 litres per second in the North Otago, Maniototo or Central Otago subregions (as identified on Maps A1-A8), or greater than 1 litre per second elsewhere in Otago; and

The Council has identified the Royal Burn being within the Lakes subregion. The applicant's flow limiting valve will ensure that the volume of water abstracted is no greater than the permitted 1 litre per second.

(c) The taking or use does not have an adverse effect on the environment.

The small rate of take and daily volume abstracted will ensure the take does not have an adverse effect on the environment.

5. Certification

It is certified that; LOFTS Water Limited may lawfully take and use surface water from the Royal Burn, as stated in the application received by the Council Authority on 29 April 2019, without a resource consent under Permitted Activity Rule 12.1.2.1 of the Regional Plan: Water for Otago.

Peter Christophers
Principal Consents Officer

Date: 22 October 2020

Attachment 4 - Recommending Report RM16.035

ORC STAFF RECOMMENDING REPORT

ID Ref: A146120
File No: RM16.035
Application No: RM16.035.01
Prepared for: Staff Consents Panel
Prepared by: Charles Horrell, Consents Officer
Date: 7 March 2016

Subject: **Discharge Permit Application RM16.035 by [redacted] and [redacted] to discharge treated wastewater to land from a proposed residential dwelling, Queenstown**

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1. Purpose

To report and make recommendations on the determination of the above application under the non-notified provisions (Section 95A) of the Resource Management Act 1991 (the Act).

2. Background Information

Applicant: [redacted]
Activity: To discharge up to 1155 litres per day (L/d) of treated wastewater to land
Location: Queenstown, approximately 200 metres north east of the intersection of Crown Range Road and Jeffrey Road
Reason: Disposal of wastewater from a residential dwelling

2.1 Description of the Proposed Activity

The applicant proposes to discharge up to 1155 L/day of human wastewater from a proposed new residential dwelling at the above location.

The applicant proposes to install an AdvanTex Wastewater Treatment System, prior to discharge to a 385 square metre (m^2) disposal field, using drip line irrigation.

2.1.1 Quantity of Discharge

The discharge maximum volume of 1155 L/d is fairly consistent with the typical wastewater volumes generated by a family of seven people, on a bore/spring-water supply, as outlined in the Australian/New Zealand Standard for On-site Domestic Wastewater Management (AS/NZS 1547:2012).

2.1.2 Quality of Discharge

The applicant proposes to install a multi treatment plant with disinfection, with a total operating capacity of 7,200 L. Primary treatment 4,000 litres; treatment textile surface area 5,019 m^2; recirculation 2000 litres; pump chamber 1200 litres. According to the manufacturer, the expected effluent quality (expressed in milligram of contaminant per litre of effluent (mg/L)) from such a system is as follows:

- 5-day Biochemical Oxygen Demand (BOD_5) <15 mg/L
- Total Suspended Solids (TSS) <15 mg/L

- Total Nitrogen (TN) <40 mg/L
- Total Phosphorus (TP) - mg/L

Effluent may undergo some further treatment once discharged to the disposal field, as a result of soil renovation and other natural processes.

2.1.3 Method of Discharge

Effluent from the multi chambered treatment plant will be (dose) pumped to a disposal field with an effective area of 385 m^2, designed for subsurface application of effluent via irrigation drip lines. 1155 L/d and a disposal field of 385 m^2 results in a maximum daily/weekly application rate of 3 millimetres (mm). This rate is within the recommended design loading rate of 3.5 mm/day for drip irrigation of treated effluent, in Category 2 soils, as specified in the AS/NZS 1547:2012.

2.2 Site Description

The proposed discharge will be on a residential section on the Crown Terrace. The land has been previously used for a back lawn for the residential site. The property has clay soils with the Royal Burn stream running through the middle of the section. The general location is shown in figure 1 below.

Figure 1: General location of the proposed discharge

According to a technical assessment prepared by the Council's Resource Science Unit, the depth to groundwater is approximately 2.5 metres (m).

According to the applicant, the Royal Burn stream is located around 15 metres to the north of the proposed disposal site. The Royal Burn is not recognised on any of the Schedules listed in Council's Regional Plan: Water.

The nearest groundwater well is F41/0271 which is located around 400 metres south east of the proposed location. However, the applicant has also stated in the application that a bore is located around 10 metres (m) from the treatment system (not from the disposal field), and that water is supplied by a spring for the property.

3. Status of the Application

The applicant is proposing to discharge human wastewater within 50 m of surface water body and can therefore not meet permitted activity Rule 12.A.1.4 of the RPW. Accordingly, this application is for a ***discretionary*** activity, pursuant to Rule 12.A.2.1 of the Regional Plan: Water for Otago (RPW).

The Council may grant or decline the application and, if granted, may impose conditions under Section 108 of the Act.

4. Non-Notification and Written Approvals

The discharge is of a small volume and acceptable application rate and there are no neighbours, downstream water users or instream values that may be adversely affected by the proposed activity. As there are not considered to be any affected parties to this application, the requirements of the decision not to publicly notify this application have been met.

5. Assessment of Environmental Effects

Disposal of human effluent must be undertaken in a manner that protects the health of humans and animals from pathogens and nitrates and ensures that the natural and human use values of water resources are maintained.

5.1 Effects of the Discharge on Groundwater

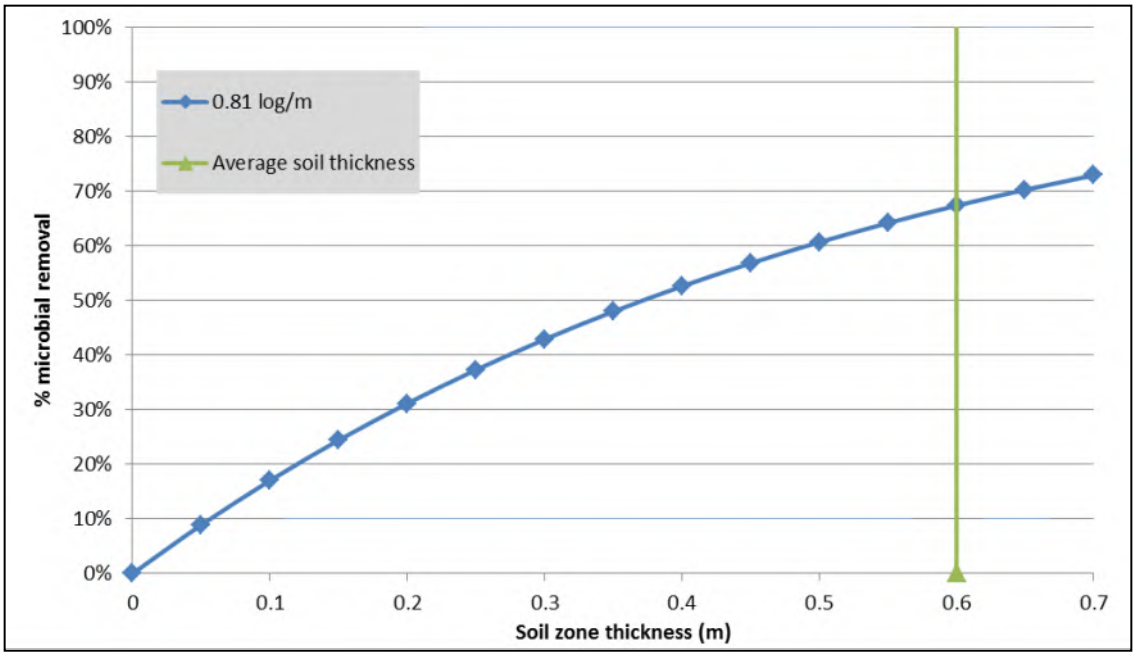
Council's Resource Science Unit (RSU) assessed the application and determined that the effects on the environment are less than minor. The following sections are taken from the assessment:

5.1.1 Pathogens

The applicant proposes to disinfect the wastewater before discharging the treated effluent through sub-surface irrigation drip lines.

The constructor is expecting a maximum value of 200 cfu/100 ml of faecal coliforms after UV disinfection. This value has been used to calculate the microbial attenuation according to 'Microbial Removal Rates in Subsurface Media Estimated from Published Studies of Field Experiments and Large Intact Soil Cores' Pang 2009.

An attenuation value of 0.81 has been applied to a thickness of 0.6m of Clay Loams to evaluate the removal within the soil.



If the initial concentration is up to 200 cfu/100ml for faecal coliforms, approximatively 54 cfu/100ml of faecal coliforms may be left after infiltration through 0.5m of clay loams (73% removal rate).

Additional removal may occur within the underlying soils and UV treatment may achieve better pathogens removal. According to ORC database no water supply bore is located down gradient to the disposal field. The potential receiving body could be the Royal Burn.

However, according to the type of soils on the site (clay loams probably overlying schist rocks) the permeability is expected to be very low.

Therefore under normal operation (without excessive infiltration rates or direct runoff), pathogens will not significantly affect the local water bodies and minor effects are expected.

5.1.2 Nitrogen

Nitrate-nitrogen is mobile through the soil and has the potential to adversely affect human health if present in high concentrations in drinking-water. The Drinking Water Standard for New Zealand 2005 (MoH, 2005) specifies a Maximum Acceptable Value for nitrate-nitrogen of 11.3 mg/L.

The proposed treatment system will produce a highly nitrified effluent that will be discharged to land via subsurface drip-line irrigation. The low application rate (3 mm per day maximum) should ensure leaching of nitrate into the groundwater is kept to a minimum.

According to the applicant the expected average concentration of the effluent for Total Nitrogen should be under 40 mg/l. However, a testing programme with analysis over 10 months provided lower concentrations under 15 mg/l. The following table summarises the nitrogen loads resulting from these total nitrogen concentrations:

	Calculations with the manufacturer average concentration	Calculations with the results over a 10 month testing program (OSET NTP) concentration
Total Nitrogen (mg/l)	40	15
Daily Flux (kg/d)	0.05	0.02
Annual Loads on the property (kg/ha/yr)	5.14	1.93
Annual Loads on the disposal field (kg/ha/yr)	438	164.3

The Nitrogen load on the total area of the property is low.

According to the Otago Water Plan Change 6A (water quality) the site is not located in a nitrogen sensitive zone, and the threshold is 30 kgN/ha/yr.

As explained previously for pathogens contamination, nitrate leaching is not expected due to the low permeability type of soils under normal operation.

The applicant was contacted about the discrepancy between the stated expected Total Nitrogen concentrations in the application and the 10 month testing programs concentrations. The applicant confirmed that the figures should be amended, as the concentration stated in the application refer to a different model treatment system; therefore the average concentration of total nitrogen should be 15mg/L with a maximum of 30 Mg/L.

5.1.2 Cumulative Effects

Adverse effects can arise from many septic tanks in close proximity, such as ground or surface water contamination. Due to the remoteness of the location, there is not expected to be many other septic tanks in close vicinity.

Council staff are not aware of any adverse cumulative effects resulting from multiple wastewater discharges in the area. The likelihood of such effects can be avoided or mitigated, provided discharges are properly managed and appropriate conditions applied to discharge permits, such as the requirement for maintenance of the septic tank and disposal field.

5.2 Effects of the Discharge on Surface Water Quality

Wastewater discharges to land may contaminate surface water via groundwater or from overland flow during disposal system malfunction.

The RPW relies on a separation distance of 50 m between small-scale discharges of sewage and a surface water body to avoid contamination. In this instance, the nearest surface watercourse, the Royal Burn is located around 15 metres north of the proposed site. Council's RSU has determined that the effect on the Royal Burn will be less minor.

5.3 Effects of Surface Ponding of Effluent

Surface ponding of poorly treated effluent can pose a significant human health risk. A condition limiting the volume of effluent discharged to that specified in the application

is recommended, along with a condition requiring effluent to be applied evenly over the disposal field. This should avoid any ponding.

5.4 Effects of the Discharge on the Use of Neighbouring Land

There is potential for wastewater discharges to contaminate groundwater beneath neighbouring properties. Given the quality and the proposed method of application of the effluent contamination of groundwater beneath neighbouring properties is unlikely.

5.5 System Maintenance

Adverse effects and nuisances arising from on-site treatment systems such as this are most often from system failure and effluent ponding. Neither of these problems should occur if the treatment and disposal system is designed, installed and maintained properly. Regular inspection is important for management of the on-site treatment and disposal system and sludge should be removed when sludge accumulation reduces settling volume below 24 hours retention, i.e. usually at 3-5 years interval.

A condition is recommended that requires a review of the treatment and disposal system to be undertaken every 10 years, which should include sampling of the treated wastewater quality to ensure that the system is still performing in accordance with the manufacturer's specifications. The results of this review are to be provided to Council once completed and any improvements to the treatment and disposal system undertaken.

5.6 Consideration of Alternatives

The area to which the application relates is not connected to a reticulated sewerage scheme. Therefore wastewater from the applicant's property needs to be treated and disposed of on-site.

6. Statutory Considerations

Section 104 of the Act sets out the matters to be considered when assessing an application for a resource consent. Those matters which should be considered for this application are:

6.1 Part 2 of the Act

This application to discharge treated wastewater to land is consistent with the purpose and the principles of the Act, as set out in Section 5. The proposed activity will have no more than minor adverse effects on the ability of the receiving environment to meet the reasonably foreseeable needs of future generations, or on the life-supporting capacity of the land or any ecosystem associated with it. Proposed consent conditions will ensure that any potential adverse effects of the activity will be avoided, remedied or mitigated.

There are no matters of national importance, as outlined in Section 6 of the Act, that may be affected by the proposed activity. The application is also consistent with Section 7 of the Act, with particular regard given to the maintenance and enhancement of the quality of the environment. With regard to Section 8 of the Act, the proposed activity is not inconsistent with the principles of the Treaty of Waitangi.

6.2 Section 104 of the Act

Section 104(1) requires the Consent Authority to have regard to a range of matters in considering resource consent applications and any submissions received. The following matters are of particular relevance to discharges to land:

(a) any actual and potential effects on the environment of allowing the activity; and

(b) any relevant provisions of –

(i) a national environmental standard:

(ii) other regulations:

(iii) a national policy statement:

(v) a regional or proposed regional policy statement:

(vi) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

These matters are discussed below.

6.2.1 Environmental Effects

The actual and potential effects of the proposed activity were considered in Section 5 of this report. Recommended conditions of consent will ensure that any adverse effects are avoided, remedied or mitigated.

6.2.2 National Environmental Standard for Sources of Human Drinking Water

Regulations 7 and 8 of the National Environmental Standard for Sources of Human Drinking Water (NES) need to be considered when assessing discharge permits that have the potential to affect registered drinking water supplies that provide 501 or more people with drinking water for 60 or more calendar days each year.

There are no water supplies that are likely to be affected by this discharge.

6.2.3 National Policy Statement for Freshwater Management

The NPS for Freshwater Management took effect on 1 July 2011 and provides overarching objectives and policies for managing the quality and quantity of freshwater resources in New Zealand. The current objectives, policies and rules of the RPW, discussed below, address the requirements of the NPS.

6.2.4 Regional Policy Statement for Otago (RPS)

The RPS has recently been reviewed and the proposed RPS was publicly notified on 23 May 2015. Consideration must be given to relevant provisions of both the operative and proposed RPS.

Operative RPS

The provisions of Chapter 5 (Land), Chapter 6 (Water) and Chapter 13 (Wastes and Hazardous Substances) of the RPS are relevant to this application.

- **Policy 5.5.3(d):** seeks to avoid, remedy or mitigate the adverse effects of activities that have the potential to contaminate soils.
- **Policy 5.5.5(c):** is to avoid, remedy or mitigate the degradation of groundwater and surface water resources caused by the introduction of contaminants resulting from landuse activities.
- **Policy 6.5.1(a) and Policy 13.5.1:** is to recognise and provide for the relationship Kai Tahu have with natural and physical resources when managing

Otago's waste stream through taking into account their cultural values and working toward eliminating human waste and other pollutants from entering waterways.

- **Policy 6.5.5(d):** promotes a reduction in adverse effects of contaminant discharges into Otago's water bodies through promoting discharges to land where practicable.

Given the small volume of discharge, the low application rate, and the method of effluent disposal any contamination of soils or water will be no more than minor and localised. The proposed discharge is consistent with the policies above, which promote the discharge of effluent to land rather than water, where practicable.

- **Objective 5.4.2:** to avoid, remedy or mitigate degradation of Otago's natural and physical resources resulting from activities using the land resource.
- **Policy 10.5.1(a) and (c):** relates to recognising and providing for the relationship Kai Tahu have with mahika kai in Otago, through working towards eliminating the disposal of human wastes and pollution into, or onto, mahika kai, and to recognise the need to maintain and enhance mahika kai.
- **Policy 7.5.1 and 9.5.1:** relates to recognising and providing for the relationship Kai Tahu have with the air resource in Otago and the built environment.
- **Policy 7.5.2:** seeks to avoid, remedy or mitigate any discharges which have adverse effects on the air resource, including effects on odour.
- **Policy 13.5.3:** seeks to avoid, remedy or mitigate the adverse effects resulting from the discharge of liquid wastes.
- **Policy 14.5.5:** to monitor, as required, the effects associated with the exercise of resource consents, to provide for the review of the appropriateness of the issue, terms and conditions of resource consent.

Based on the method of disposal proposed and the recommended conditions to reduce the overall effects of the activity; the proposed discharge is considered consistent with the policies above.

Proposed RPS

The provisions of Chapters 1-4 of the proposed RPS are relevant to this application

- **Policy 1.1.2:** Taking the principles of Te Tiriti o Waitangi into account
- **Policy 1.2.1:** Managing the natural environment to support Kāi Tahu wellbeing
- **Policy 1.2.3:** Protecting important sites and values of cultural significance to Kāi Tahu
- **Policy 2.1.1:** Managing for freshwater values, including
  - Support healthy ecosystems in all Otago aquifers, and rivers, lakes, wetlands and their margins;
  - Protect outstanding water bodies and wetlands;
  - Maintain good water quality, including in the coastal marine area, or enhance it where it has been degraded;
  - Maintain or enhance coastal values supported by freshwater values;
  - Retain the quality and reliability of existing drinking water supplies;
  - Protect Kāi Tahu values;
  - Provide for other cultural values;
  - Protect important recreational values
  - Maintain the aesthetic and landscape values of rivers, lakes and wetlands

- **Policy 2.1.5:** Managing for soil values
- **Policy 2.2.13:** Managing outstanding water bodies and wetlands
- **Policy 3.1.1:** Recognising natural and physical environmental constraints
- **Policy 3.3.2:** Adapting to, or mitigating the effects of, climate change
- **Policy 3.9.2:** Managing the use, storage and disposal of hazardous substances, and the storage and disposal of waste materials
- **Policy 4.5.1:** Avoiding objectionable discharges including discharges of human or animal waste directly to water, in close proximity to water or in close proximity to mahika kai sites.
- **Policy 4.5.2:** Applying an adaptive management approach

The proposed discharge will have no more than minor effects on freshwater values and soil values. The discharge will not be direct to water and iwi values have been given consideration when assessing the application.

6.2.5 Regional Plan: Water for Otago (RPW)

The following policies from the RPW, including Plan Change 6A, are relevant to this application:

- **Policy 7.B.1:** Manage the quality of water in Otago lakes, rivers, wetlands and groundwater by recognising the differences in the effects and management of point and non-point source discharges; defining in Schedule 15 characteristics indicative of good water quality, setting receiving water numerical limits and targets; maintaining good quality water, enhancing water quality where it does not meet Schedule 15 limits, recognising discharge effects on groundwater and promoting the discharge of contaminants to land in preference to water.
- **Policy 7.B.2:** Avoid objectionable discharges of water or contaminants to maintain the natural and human use values, including Kāi Tahu values, of Otago lakes, rivers, wetlands, groundwater and open drains and water races that join them.
- **Policy 7.B.3:** Allow discharges of water or contaminants to Otago lakes, rivers, wetlands and groundwater that have minor effects or that are short term discharges with short term adverse effects.
- **Policy 7.B.4:** In considering the discharge of any contaminant to land, to have regard to the ability of the land to assimilate the water or contaminants; any potential for soil contamination; any potential for land instability; any potential adverse effects on water quality; and any potential adverse effects on use of any proximate coastal marine area for contact recreation and seafood gathering.
- **Policy 7.B.8:** Encourages adaptive management and innovation that reduce the level of contaminants in discharges.
- **Policy 7.C.2:** When considering applications for resource consents to discharge contaminants to water, or onto or into land in circumstances which may result in any contaminant entering water, to have regard to: the nature of the discharge and the sensitivity of the receiving environment to adverse effects; the financial implications, and the effects on the environment of the proposed method of discharge when compared with alternative means; and the current state of technical knowledge and the likelihood that the proposed method of discharge can be successfully applied.
- **Policy 7.C.4:** The duration of any new resource consent for an existing discharge of contaminants will take account of the anticipated adverse effects of the discharge on any natural and human use value supported by an affected water body, and will be up to 35 years where the discharge will meet the water quality standard required

to support that value for the duration of the resource consent; will be no more than 15 years where the discharge does not meet the water quality standard required to support that value but will progressively meet that standard within the duration of the resource consent; will be no more than 5 years whether the discharge does not meet the water quality standard required to support that value; and no resource consent, subsequent to one issued under above will be issued of the discharge still does not meet the water quality standard required to support that value.

In this instance, the proposed method of discharge, the low discharge rate and the good effluent quality will ensure that any adverse effects are no more than minor and localised. The proposed treatment and disposal system is considered to be an acceptable option for managing wastewater on the site. A review condition has been recommended.

6.2.6 Kai Tahu ki Otago Natural Resource Management Plan 2005

The Kai Tahu ki Otago Natural Resource Management Plan 2005 (NRMP) contains several policies of relevance to this application:

- To require land disposal for human effluent and other contaminants.
- To require monitoring of all discharges and that this be undertaken on a regular basis and all information, including an independent analysis of monitoring results, be made available to Kai Tahu ki Otago.
- To require that all discharge systems are well maintained and regularly serviced. Copies of all service and maintenance records should be available to Kai Tahu ki Otago upon request.
- To require visible signage informing people of the discharge area. Such signs are to be written in Maori as well as English.
- To require groundwater monitoring for all discharges to land.

As effluent from the proposed treatment and disposal system is to be discharged to land, at a low application rate, the proposed activity is not considered inconsistent with the above management policies. Effluent and groundwater monitoring have not been recommended given the scale and quality of the proposed discharge. Signs are also not recommended due to the discharge being below ground and the suggested conditions requiring no ponding of effluent.

A condition is included on the draft consent that provides KTkO with an opportunity to inspect the site, should any kiowi, waahi taoka, waahi tapu or other artefact materials be discovered during the construction of the treatment and disposal system.

6.2.7 Other Matters

There are no other matters that are relevant and reasonably necessary to determine the application.

6.3 Section 105 of the Act

Section 105(1) states for a discharge permit that the Consent Authority shall have regard to:

(a) the nature of the discharge, the sensitivity of the receiving environment, and the applicant's reasons for the proposed choice; and

(b) any possible alternative methods of discharge including discharge into any other receiving environment.

These matters were considered in Sections 2 and 5 of this report. The proposed treatment and disposal system is considered the best practicable option and will have no more than minor adverse environmental effects.

6.4 Section 107 of the Act

Section 107(1) of the Act states that a discharge permit shall not be granted if, after reasonable mixing, the contaminant or water discharged is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material; or
- Any conspicuous change in the colour or visual clarity; or
- Any emission of objectionable odour; or
- The rendering of fresh water unsuitable for consumption by farm animals; or
- Any significant adverse effects on aquatic life.

Given that effluent is discharged to land, at a low application rate, and will undergo significant renovation in the soil column, as well as dilution and dispersion in the groundwater, prior to entering the Royal Burn, none of the effects listed above are expected to occur in the creek.

7. Recommendation

That the Otago Regional Council grants to Patrick Garceau and Liisa Kirsi Elina Garceau, Discharge Permit RM16.035, subject to the terms and conditions set out in the attached consent.

7.1 Reasons for Recommendation

1. That it is expected that the adverse effects on the environment will be minor and can be adequately addressed through the recommended consent conditions.
2. That the application meets the non-notification requirements of Section 95A of the Act.
3. That the proposed activity is consistent with the requirements of the Act and Council policy.

8. Term

The applicant has requested a term of 20 years. A term of 20 years is considered appropriate for this consent and is the recommendation of this report. This is in line with Council's guidelines for the disposal of treated wastewater to land. A condition is recommended that requires maintenance checks of the treatment and disposal system to be undertaken every 10 years, which should include sampling of the treated wastewater quality to ensure that the system is still performing in accordance with the manufacturer's specifications.

Charles Horrell
Consents Officer

Attachment 5 - Discharge Permit RM16.035

Our Reference: A885840

COUNTERPART

Otago Regional Council

Consent No. RM16.035.01

DISCHARGE PERMIT

Pursuant to Section 104B of the Resource Management Act 1991, the Otago Regional Council grants consent to:

Name: [redacted]u

Address: [redacted]n

To discharge treated domestic wastewater to land for the purpose of disposal of wastewater from a residential dwelling

For a term expiring 1 March 2036

Location of consent activity (midpoint of disposal field): Crown Terrace, approximately 150 metres north east of the intersection of Crown Range Road and Jetty Road

Legal description of consent location: Part Lot 1 DP 22935

Map Reference (NZTM 2000):
North east corner of disposal field: E1274906 N5011438
South east corner of disposal field: E1274913 N5011435
North west corner of disposal field: E1274868 N5011411
South west corner of disposal field: E1274871 N5011408

Conditions

Specific

1. The discharge shall only be from an AdvanTex mode 3 AX20 secondary treatment system. The treatment and disposal system shall comprise as a minimum:
   (a) a mulitchambered septic tank with a total capacity of 7,200 litres:
   (b) a disposal field of 385 square meters in size
   (c) subsurface disposal lines to distribute effluent evenly over the disposal fields
   (d) manufacturer's design specifications for effluent quality that is <30 mg/L 5-day Biochemical Oxygen Demand (BOD5), <20mg Total Suspended Solids (TSS) , <30 mg/L Total Nitrogen (TN) and <200 Faecal Coliforms FC (cfu/100mL).

2. The volume of effluent discharge shall not exceed 1155 litres per day and the rate of application shall not exceed 3 millimetres per day in any part of the disposal area.

3. The distance to any property boundary from any part of the treatment and disposal system shall be at least 1.5 metres.

Performance Monitoring

4. The treatment and disposal system shall be maintained in an efficient operating condition at all times including at least:
(a) annual inspections of the septic tank and outlet filter; and
(b) regular tank desludging to maintain at least 24 hours retention time of the average daily flow and/or as recommended by the manufacturer of the system; and
(c) filter cleaning as necessary.

5. Within three months of the exercising of this consent, the consent holder shall prepare and forward to the Consent Authority an Operations and Management Manual for the treatment and disposal system to ensure its effective and efficient operation at all times. The system shall be operated in accordance with this manual, which shall be updated as appropriate. The manual shall include, as a minimum,:
(a) a brief description of the treatment and disposal system, including a site map indicating the location of the treatment and disposal system, points of discharge and any monitoring sites;
(b) key operational matters, including weekly, monthly and annual maintenance checks;
(c) monitoring requirements and procedures;
(d) contingency plans in the event of system malfunctions or breakdowns;
(e) the means of receiving and dealing with any complaints; and
(f) emergency contact phone numbers.

6. Records of maintenance, complaints, malfunctions and breakdowns shall be kept in a log and this log shall be submitted to the Consent Authority by 30 June each year and be made available on request.

7. The consent holder, on each 10th anniversary of the issue of this consent, shall engage a suitably qualified professional to undertake an inspection of the wastewater treatment and disposal system. This inspection shall include, but not be limited to:
(a) General examination of the treatment plant and disposal area for any signs of malfunction or failure;
(b) Inspection of sludge levels and identification of any other maintenance required to ensure optimal performance of the treatment plant;
(c) Inspection of the disposal field and identification of pipeline clearing or any other maintenance required; and
(d) Sampling and analysis of treated wastewater for the parameters listed in Condition 2 of this consent.
The findings of the inspection shall be reported to the Consent Authority within 6 weeks of the inspection being undertaken.
The consent holder shall undertake any work that is recommended in the report to ensure the efficient and safe operation of the septic tank and disposal field.

Otago Regional Council

General

8. No ponding or surface run-off of effluent shall occur as a result of the exercise of this consent.

9. There shall be no odour emission resulting from the treatment and disposal system that is offensive or objectionable to such an extent that it has an adverse effect on the environment beyond the boundary of the property on which the consent is exercised.

10. There shall be no vehicle access over any part of the land disposal area.

11. This permit does not authorise the discharge of sludge to land or water.

12. If the consent holder:
(a) discovers koiwi tangata (human skeletal remains), or Maori artefact material, the consent holder shall without delay:
(i) notify the Consent Authority, the Heritage New Zealand Regional Archaeologist, appropriate iwi groups or kaitiaki representative, and in the case of skeletal remains, the New Zealand Police; and
(ii) stop work within the immediate vicinity of the discovery and within 20 metres around the site to allow a site inspection by the Heritage New Zealand Regional Archaeologist and the appropriate iwi groups or kaitiaki representative and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken, as long as all statutory requirements under legislation are met. Remains are not to be moved until such time as iwi and Heritage New Zealand have responded.
Site work shall recommence following consultation with the Consent Authority, Heritage New Zealand, iwi, and in the case of skeletal remains, the New Zealand Police, provided that any relevant statutory permissions have been obtained.
Where iwi request, any information recorded as the result of the find such as a description of location and content, shall be provided for their records.
(b) discovers any feature or archaeological material that predates 1900, or heritage material, or disturbs a previously unidentified archaeological or heritage site, the consent holder shall without delay:
(i) notify the Consent Authority, Heritage New Zealand Regional Archaeologist, and in the case of Maori features or materials, the appropriate iwi groups or kaitiaki representative. Heritage New Zealand will determine if an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014 is required for works to continue; and
(ii) stop work within the immediate vicinity of the discovery or disturbance and within 20 metres around the site.
Site work shall recommence following consultation with the Consent Authority, Heritage New Zealand and iwi, provided that any relevant statutory permissions have been obtained.

Otago Regional Council

Review

13. The Consent Authority may, in accordance with sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent within three months of each anniversary of the commencement of this consent, for the purpose of:
(a) determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or which become evident after the date of commencement of the consent; or
(b) ensuring the conditions of this consent are consistent with any National Environmental Standards Regulations, relevant plans and/or the Otago Regional Policy Statement; or;
(c) requiring the consent holder to adopt the best practicable option, in order to remove or reduce any adverse effect on the environment arising as a result of the exercise of this consent. Best practicable option includes, but is not limited to, connecting to a reticulated community sewerage scheme, should such an option become available to the consent holder.

Notes to Consent Holder

1. *If you require a replacement consent/permit upon the expiry date of this permit, any new application should be lodged at least 6 months prior to the expiry date of this permit. Applying at least 6 months before the expiry date may enable you to continue to exercise this permit until a decision is made, and any appeals are resolved, on the replacement application.*

Issued at Dunedin this 10th day of March 2016

Christopher P. Shaw
Manager Csents

Attachment 6 - Baker Steed Deemed Permit Application

1 Resource Consent Application

Otago Regional Council

This application is made under Section 88 of the Resource Management Act 1991.

(For Office Use Only)
Deposit Paid: $

Charges / Deposits

A deposit **must** accompany the application (see page **8** for amounts). The applicant will be invoiced for all costs incurred in processing this application that exceed the deposit.

Council can accept electronic lodgement of applications if sent to consents.applications@orc.govt.nz. Include "consent application" in the subject line.

Please complete the application in pen. For questions marked with an * you will find notes on page 4

1.* Applicant(s) Details

Applicant(s) name(s) in full: Bridget Anne Baker & John Selwyn Baker, Barry John Hodges, Philip Ronald Blakely & Mary Elizabeth Wallace, Troy Morrison Stewart & Vera Elizabeth Stewart

OR Company Name (in full) _____

OR Names of Trustees (in full) if Applicant is a Trust _____

or Name of Incorporation _____

Postal Address [redacted]

Post Code [redacted]

Street Address
(not a P O box number) [redacted]

Post Code [redacted]

Phone Number Business _____ Private _____

Mobile [redacted] Fax _____

Email Address [redacted]

Please provide a valid and clear email address. Otago Regional Council is moving to a paperless consenting process – therefore any correspondence including decision documents and consent (if granted) will be sent via email, unless you request a paper copy.

If you do not prefer contact by electronic means, please tick ☐

1(a). Key Contact for Applicant Details

If the applicant consists of multiple parties (e.g. multiple consent holders, Trust etc) please outline who the key contact for the consent will be, if granted.

Key contact name(s) in full: Bridget Anne Baker & John Selwyn Baker

Postal Address [redacted]

Post Code [redacted]

Street Address
(not a P O box number) [redacted]

Post Code [redacted]

Phone Number Business [redacted] Private

Mobile [redacted] Fax

Email Address [redacted]

Please provide a valid and clear email address. Otago Regional Council is moving to a paperless consenting process – therefore any correspondence including decision documents and consent (if granted) will be sent via email, unless you request a paper copy.

If you do not prefer contact by electronic means, please tick ☐

2.* Consultant/Contact Details (if not applicant)

Name of Consultant/ Contact Person: Brodie Costello

Postal Address 13 Pinot Noir Drive, PO Box 302, Cromwell

Post Code 9342

Phone Number Business 0800 023 318 Private

Mobile Fax

Email Address brodie@landpro.co.nz

Please provide a valid and clear email address. Otago Regional Council is moving to a paperless consenting process – therefore any correspondence including decision documents and consent (if granted) will be sent via email, unless you request a paper copy.

If you do not prefer contact by electronic means, please tick ☐

3. On Site Supervisor/Manager Contact Details (if applicable)

Name of On Site Supervisor/Manager Person:

Postal Address

Post Code

Phone Number Business Private

Mobile Fax

Email Address

Please provide a valid and clear email address. Otago Regional Council is moving to a paperless consenting process – therefore any correspondence including decision documents and consent (if granted) will be sent via email, unless you request a paper copy.

If you do not prefer contact by electronic means, please tick ☐

4.* a) Are there any current or expired resource consents relating to this proposal?

☑ Yes ☐ No

If yes, give Consent Number(s) and Description: Deemed Permit 97402

b) Do you agree to your current consent automatically being surrendered should a replacement consent be issued.

☐ Yes ☑ No

c) Has there been a previous application for this activity that was returned as incomplete?

☐ Yes ☑ No

If yes, give Consent Number(s) and Description: _____

_____

_____

d) Have you a pre-application lodged with Council for this activity?

☐ Yes ☑ No

If yes, give pre-application Number(s) and Description: _____

_____

_____

e) Have you spoken to a Council staff member about this application prior to lodging this application?

☐ Yes ☑ No If yes, please state name of staff member _____

5. The applicant is (tick one): neighbouring landowners **of the land on which the activity occurs.**

6*. Who is the owner of the land on which the activity occurs/is to occur? (only complete if applicant is not the landowner)

Name of landowner: [redacted]

Postal Address [redacted]

Post Code [redacted]

Phone Number Business [redacted] Private _____

Mobile [redacted] Fax

Email Address [redacted]

7*. Who is the occupier of the land on which the activity occurs/is to occur? (only complete if the applicant is not the land occupier)

Name of land occupier _____

Postal Address _____

_____

_____ Post Code _____

Phone Number Business _____ Private _____

Mobile _____ Fax _____

Email Address _____

8*. Who leases the land on which the activity occurs/is to occur? (only complete if land is leased and it is not leased to the applicant)

Name of land leasee _____

Postal Address _____

_____

_____ Post Code _____

Phone Number Business _____ Private _____

Mobile _____ Fax _____

Email Address _____

9. Tick the consents required in relation to this proposal:

Water

☑ Take Surface Water ☐ Divert

☐ Take Groundwater ☐ Dam

Discharge onto or into:

☐ Land ☐ Water ☐ Air

Land Use:

☐ Bore construction ☐ Bore alteration

☐ Activities in or on beds of lakes or rivers or floodbanks

☐ Disturbance of contaminated land

Coastal: ☐ Activities in the coastal marine area (i.e., below mean high water spring tide)?

Where you have indicated the type of consent that is required, you must complete the appropriate Application Form before your application can be processed. Application Forms can be found on the Council's website: www.orc.govt.nz.

10. What is the maximum term of consent you are seeking? 35 years

11.Territorial Local Authority in which activity is situated?

☐ Dunedin City Council ☑ Queenstown Lakes District Council

☐ Clutha District Council ☐ Waitaki District Council

☐ Central Otago District Council

12*. Do you require any other resource consent from any local authority for this activity?

☐ Yes ☑ No

If Yes, please list: _____

Have these consents been applied for/issued? ☐ Yes ☐ No If Yes

If Yes, please give the date applied for or issued: _____

Notes on Application Form Details

1. **Applicant(s) Details**

A resource consent can only be held by a legal organisation or fully named individual(s). A legal organisation includes a limited company, incorporated group or registered trust. If the application is for a trust the full names of all trustees are required. If the application is not for a limited company, incorporated group or trust, then you must use fully named individual(s).

2. **Consultant/Contact Details**

If you are using a consultant/agent for this application put their details here. If you are not, leave question 2 blank.

4 Previous Consent

Do you currently have a resource consent to do the activity that you are applying to renew with this application? If so, please enter the permit number if known and a brief description including the date of issue and the expiry date.

6-8 **Landowner, occupier and leasee**

If you are not the landowner, land occupier or leasee of the land where the activity will be undertaken, you may be required to obtain their unconditional written approval to your application. On pg 6 there is a form that can be used.

12. **Additional Consents**

If you are carrying out earthworks or building work you may need other consents from either the ORC or your Territorial Local Authority.

Declaration

Before signing the declaration below, in order to provide a complete application have you remembered to:

Fully completed this Form 1 and the necessary Application Forms ☐

Attached the required deposit.(or pay on line) (see page 8 for deposit that is payable) ☐
Cheques payable to Otago Regional Council

Please note: your deposit may not cover the entire cost of processing your application. At the end of the application process you will be invoiced for any costs that exceed the deposit. Interim invoices may be sent out for applications, where appropriate.
If the required deposit does not accompany your application, staff will contact you on the phone number provided on this form to request payment, and after 3 working days your application will returned if no payment is made for the required deposit.

I/we hereby certify that to the best of my/our knowledge and belief, the information given in this application is true and correct.

I/we undertake to pay all actual and reasonable application processing costs incurred by the Otago Regional Council.

Name/s BRODIE COSTELLO (on behalf)
(BLOCK CAPITALS)

Signature/s _____
(or person authorised to sign on behalf of applicant)

Designation Consultant Date 30/01/2020
(e.g., owner, manager, consultant)

Otago Regional Council Postal Address: 70 Stafford St, Private Bag 1954, Dunedin 9054

Consultation

– (consultation is not compulsory, but it can make a process easier and reduce costs).

Under Section 95E of the Resource Management Act 1991 (the Act) the Council will identify affected parties to an application and if the application is to be processed on a non-notified basis the unconditional written approval of affected parties will be required. Consultation with potentially affected parties and interested parties can be commenced prior to lodging the application.

Consultation may be required with the appropriate Tangata Whenua for the area. The address of the local Iwi office is: Aukaha, 258 Stuart Street, P O Box 446, Dunedin, Fax (03)477-0072, Phone (03) 477-0071, email: info@aukaha.co.nz. If you require further advice please contact the Otago Regional Council.

Good consultation practices include:

- Giving people sufficient information to understand your proposal and the likely effects it may have on them
- Allowing sufficient time for them to assess and respond to the information
- Considering and taking into account their responses

Written approval forms are appended to this form on Page 9.

Information Requirements

In order for any consent application to be processed efficiently in the minimum time and at minimum cost, it is critical that as much relevant information as possible is included with the application. **Where an application is significantly incomplete, the Consent Authority may decide not to accept the application for processing.**

Resource Management Act 1991
FOURTH SCHEDULE—ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

(Below are the provisions of the 4th schedule of the Act, which describes what must be in an application for resource consent, as amended in 2015.)

1 Information must be specified in sufficient detail

Any information required by this schedule, including an assessment under clause 2(1)(f) or (g), must be specified in sufficient detail to satisfy the purpose for which it is required.

2 Information required in all applications

(1) An application for a resource consent for an activity (the **activity**) must include the following:

(a) a description of the activity:

(b) a description of the site at which the activity is to occur:

(c) the full name and address of each owner or occupier of the site:

(d) a description of any other activities that are part of the proposal to which the application relates:

(e) a description of any other resource consents required for the proposal to which the application relates:

(f) an assessment of the activity against the matters set out in Part 2:

(g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b). *("document" includes regional & district plans, regulations, national policy statements, iwi plans*)

(2) The assessment under subclause (1)(g) must include an assessment of the activity against—

(a) any relevant objectives, policies, or rules in a document; and

(b) any relevant requirements, conditions, or permissions in any rules in a document; and

(c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).

(3) An application must also include an assessment of the activity's effects on the environment that—

(a) includes the information required by clause 6; and

(b) addresses the matters specified in clause 7; and

(c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

3 Additional information required in some applications

An application must also include any of the following that apply:

(a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):

(b) if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)):"(c) if the activity is to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011, an assessment of the activity against any resource management matters set out in that planning document (for the purposes of section 104(2B)

4 (relates to subdivisions- *not included here as subdivisions not ORC jurisdiction.)*

5 Additional information required in application for reclamation

An application for a resource consent for reclamation must also include information to show the area to be reclaimed, including the following:

(a) the location of the area:

(b) if practicable, the position of all new boundaries:

(c) any part of the area to be set aside as an esplanade reserve or esplanade strip.

Assessment of environmental effects

6 Information required in assessment of environmental effects

(1) An assessment of the activity's effects on the environment must include the following information:

(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:

(b) an assessment of the actual or potential effect on the environment of the activity:

(c) if the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment that are likely to arise from such use:

(d) if the activity includes the discharge of any contaminant, a description of—

(i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and

(ii) any possible alternative methods of discharge, including discharge into any other receiving environment:

(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:

(f) identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted:

(g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:

(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).

(2) A requirement to include information in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

(3) To avoid doubt, subclause (1)(f) obliges an applicant to report as to the persons identified as being affected by the proposal, but does not—

(a) oblige the applicant to consult any person; or

(b) create any ground for expecting that the applicant will consult any person.

7 Matters that must be addressed by assessment of environmental effects

(1) An assessment of the activity's effects on the environment must address the following matters:

(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:

(b) any physical effect on the locality, including any landscape and visual effects:

(c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:

(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations:

(e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:

(f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.

(2) The requirement to address a matter in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

Set out below are details of the amounts payable for those activities to be funded by fees and charges, as authorised by s36(1) of the Resource Management Act 1991.

Resource Consent Application Fees (from 1 July 2018)

Note that the fees shown below are a **deposit** to be paid on lodgement of a consent application and applications for exemptions in respect of water metering devices. This deposit will not usually cover the full cost of processing the application, and further costs are incurred at the rate shown in the scale of charges. GST is included in all fees and charges.

If you wish to make a payment via internet banking, or on line, the details are below. Please note the applicants name and "consent application" should be used as reference when paying the deposit -

For on line payments go to www.orc.govt.nz and go to Home/ Rates/ Way to Pay and follow prompts

Publicly Notified Applications: [3]	**$**
First application	5,000.00
Concurrent applications	225.00

Non Notified Applications and Limited Notified Applications: [3]	**$**
First application (except those below)	1,000.00
Concurrent applications [1]	50.00
Variation to conditions – s127	1,000.00
Administrative variation – s127	500.00
Exemptions from water measuring Regulations	200.00
Bores	500.00
Gravel	500.00

Hearings	Per Note 2 below
Payment for Commissioner request – s100A	Per Note 4 below
Objections	
Payment for Commissioner request – s357AB	Per Note 4 below

Transfers and Certificates Deposits:	**$**
Transfer of permits and consents	100.00
Priority Table	100.00
Section 417 Certificate	200.00
Certificate of Compliance	200.00
Section 125 – Extension of lapse date	100.00
All Other Costs	As per Scale of Charges

Scale of Charges:		**From 1 July 2018 $**
Staff time per hour:		
* Executive staff		235.00
* Senior Technical/Scientist		170.00
* Technical/Scientist		125.00
* Field Staff		100.00
* Administration		85.00
Disbursements		Actual
Additional site notice		Actual
Advertisements		Actual
Vehicle use per kilometre		0.70
Travel and accommodation		Actual
Testing charges		Actual
Consultants		Actual
Commissioners		Actual
Photocopying and printing		Actual
Councillor hearing fees per hour		
	*Chairperson	100
	*Member	80
	*Expenses	Actual

Notes

1. For additional permits in respect of the same site, activity, applicant, time of application, and closely related effect as the first application.

2. The deposit payable shall be 90% of the cost of a hearing as calculated by Council in accordance with information contained in the application file and using the scale of charges. The amount payable will be due at least 10 working days before the commencement of the hearing. If the amount is not paid by the due date, then the Otago Regional Council reserves the right under S36 (7) of the Resource Management Act to stop processing the application. This may include cancellation of the hearing.

Should a hearing be cancelled or postponed due to the non payment of the charge, the applicant will be invoiced for any costs that arise from that cancellation or postponement.

Following completion of the hearing process, any shortfall in the recovery of hearing costs will be invoiced, or any over recovery will be refunded to the applicant.

Under Section 100A of the RMA, one or more submitters may make a request to have a resource consent application heard by one or more hearing commissioners who are not members of Council. In this case the applicant will pay the amount that Council estimates it would cost for the application to be heard had the request not been made, and the submitter(s) who made the request will pay, in equal shares, the cost of the application being heard that exceeds that amount payable by the applicant.

Further, the applicant may request to have a resource consent application heard by one or more hearing commissioners who are not members of Council. In this case, the applicant will pay the full costs.

3. Where actual and reasonable costs are less than the deposit paid, a refund will be given.

4. Where an applicant requests under s100A (for a consent hearing) or under s357AB (for the hearing of an objection) an independent commissioner(s); the applicant will be required to pay any increase in cost of having the commissioner(s).

   Where a submitter(s) requests under s100A an independent commissioner(s) any increase in costs that is in addition to what the applicant would have paid shall be paid by the submitter. If there is more than one submitter who has made such request the costs shall be evenly shared.

Administrative Charges
The following one-off administration charges shall apply to all resource consent applications received:

Publicly Notified and Limited Notified Applications	**$**
First application	100.00
Concurrent applications	50.00
Non-Notified Applications	**$**
First application	50.00
Concurrent applications	25.00
Other	**$**
Certificate of Compliance	25.00
Section 417 Certificate	25.00
Exemptions from water metering regulations	25.00

Review of Consent Conditions
Following the granting of a consent, a subsequent review of consent conditions may be carried out at either request of the consent holder, or, as authorised under Section 128, as a requirement of Council. Costs incurred in undertaking such reviews will be payable by the consent holder at the rates shown in the Scale of Charges above.

Reviews initiated by Council will not be charged to consent holders.

Compliance Monitoring Charges (from 1 July 2017)

1. Performance Monitoring
The following charges will apply to the review of performance monitoring reports for all consent holders, except those listed in section 1.6 below. The charges shown are annual fixed fees per performance monitoring report or plan, and are inclusive of GST.

		From 1 July 2017
1.1 Discharge to Air Consent		**$**
Measurement of contaminants from a Stack report		86.00
Ambient air quality measurement of contaminants report		100.00
Management plans and maintenance records		33.50
Annual Assessment report		66.50
1.2 Discharge to Water, Land and Coast		**$**
• Effluent Systems	Environmental Quality report	46.50
	Installation producer statements	60.00
	Return of flow/discharge records	60.00
• Active Landfills	Environmental Quality report	58.00
	Management Plans	130.00
• Industrial Discharges	Effluent quality report	42.00
	Environmental report	92.50
	Return of flow/discharge records	60.00
Annual Assessment report		50.00
Management Plans – minor environmental effects		130.00
Management Plans – major environmental effects		260.00
Maintenance records		30.00

1.3 Water Takes

Verification reports	60.00
Annual assessment report	50.00
Manual return of data per take	80.00
Datalogger return of data per take sent to the ORC	50.00
Telemetry data per consent	35.00
Administration fee – water regulations	100.00
Low flow monitoring charge*	
- Kakanui at McCones	327.00
- Unnamed Stream at Gemmels	1,431.00

*Charge for monitoring sites established by the ORC specifically to monitor consented activities in relation to river flows.

1.4 Structures

Inspection reports for small dams	130.00
Inspection reports for large dams	260.00
Structure integrity reports	80.00

1.5 Photographs

Provision of photos	60.00

1.6 Set Fees for Specific Consent Holders

Performance monitoring fees will be charges as 75% of actual costs for the following consent holders

Dunedin City Council
Central Otago District Council
Clutha District Council
Queenstown Lakes District Council
Waitaki District Council
Ravensdown
Contact Energy
Trustpower
Pioneer Generation

Additional charges may be incurred for new consents granted during the year.

2. Audit

Audit work will be charged at half of the actual cost incurred, with the actual costs being calculated using the Scale of Charges.

3. Non-Compliance, Incidents and Complaints

Enforcement work on consent conditions, and remedying negative effects from permitted activities – Scale of Charges.

Gravel Inspection and Management

Gravel extraction fee – $0.66 per cubic metre (incl. GST). Where more than 10,000 cubic metres of gravel is extracted within a prior notified continuous two month period, the actual inspection and management costs will be charged, as approved by the Director Corporate Services.

Written Approvals of Persons Likely to be Adversely Affected

I/We (Please print full name/s)_____ _____

of (Address) _____

I /we have read the full application for the proposal by (Applicant)

_____

for a Resource Consent (Number) _____ to _____

_____

and give my/our written approval to the proposed activity/activities.

In signing this written approval I/we understand that:

- The consent authority must decide that I/we am/are no longer an affected person, and disregard adverse effects on me/us
- That /we I may withdraw my/our written approval in writing before the hearing, or if no hearing before a decision is made on the application.

Signature/s_____ Date _____
(or person authorised to sign on behalf of affected party/parties)

Phone _____ Fax _____ Email _____

Please note: If this application is subsequently notified the above approval does not constitute a submission as required under Section 96 of the Resource Management Act 1991.

Written Approvals of Persons Likely to be Adversely Affected

I/We (Please print full name/s)_____ _____

of (Address) _____

I /we have read the full application for the proposal by (Applicant)

_____

for a Resource Consent (Number) _____ to _____

_____

and give my/our written approval to the proposed activity/activities.

In signing this written approval I/we understand that:

- The consent authority must decide that I/we am/are no longer an affected person, and disregard adverse effects on me/us
- That /we I may withdraw my/our written approval in writing before the hearing, or if no hearing before a decision is made on the application.

Signature/s_____ Date _____
(or person authorised to sign on behalf of affected party/parties)

Phone _____ Fax _____ Email _____

Please note: If this application is subsequently notified the above approval does not constitute a submission as required under Section 96 of the Resource Management Act 1991.

Resource Consent Application Form 4

To take and use surface water

This application is made under Section 88 of the Resource Management Act 1991.

---

1. Note to applicants

The purpose of this form is to provide applicants with guidance on information that is required for your application under the Resource Management Act 1991. This form acts as a guide only and Otago Regional Council reserves the right to request additional information.

Please ensure that you fully complete this form **as well as** a fully completed resource consent application form (form 1) in support of your application, **and** preparation of an **Assessment of Environmental Effects** in terms of the Fourth Schedule of the Resource Management Act 1991. Failure to do so may result in Council rejecting your application, requesting further information, or publicly notifying your application, leading to delays in the processing of your application and potential increases in processing costs.

Acceptance of your application for processing does not constitute a guarantee that water allocation is available.

2. General

2.1 This application is for (please tick any applicable box):

☐ A new surface water take

☐ An application to replace a current Water Permit

Water permit number: *Expiry date:*

☑ An application to replace a Deemed Permit / Mining Privilege

Deemed permit number: 97402 *Expiry date:* 1 October 2021

2.2 A lapse period of 5 years is sought. Provide reasons in application attached.

Note: This is the timeframe within which the consent must be given effect to. The default timeframe is 5 years after the date of commencement of the consent unless stated otherwise.

2.3 A consent term of 35 years is sought. Provide reasons in application attached.

Note: This is the timeframe from the date of commencement of the consent which the consent will expire.

2.4 Provide a map or coloured aerial photograph which outlines the following details (as applicable):

- [x] The location of the existing and proposed point(s) of take and all associated infrastructure
- [x] The location of the water measuring device(s) or system(s)
- [x] The total property area boundary
- [x] The area(s) to be irrigated (if relevant) by water applied for under this application
- [ ] The area of the community supply (if relevant)
- [ ] Distances to any discharge activities
- [x] Other surface water bodies and wetlands, and distances from the point of take(s) to them
- [ ] The coastline and the distance to it (if relevant)
- [ ] The location of any dairy shed(s)
- [ ] The location of any known recreational activities, other water takes, areas of significance to iwi and areas where food is obtained from the water body.

3. Volume and rates of take applied for

3.1 Quantity and rate of take

Note: 1,000 litres = 1 cubic metre

a. Maximum rate of take: 25 litres per second

b. Maximum monthly volume: 63,273 cubic metres per month

c. Maximum annual volume: 310,117 cubic metres per year

*Note: Some deemed permits refer to hourly/weekly rates. Water permits are issued in litres per second, m^3 per month and m^3 per year. Should you wish to seek hourly or weekly rates **in addition** to those listed on the form, please provide this information including justification for any variances.*

3.2 Frequency of take

Note both the maximum and estimated average take.

	Average	Maximum
How many hours per day?	24	24
How many days per week?	7	7
How many weeks per month?	4	4

3.2.1 In your application describe the timing of your take, including which months of the year you expect to take water in both an average year and a dry year, and what part of day the water take will generally occur.

3.2.2 In your application describe whether the take is from re-charge or is an augmented take, along with whether your activity provides re-charge back into the catchment.

3.3 Storage

3.3.1 Do you intend to store your water before subsequent use?

☑ Yes

☐ No

3.3.2 If yes, what/how much storage will be provided?

4815 m^3

3.3.3 In your application outline the type of storage facilities that are proposed.

Note: You may need a building consent and/or additional resource consents for the construction of storage facilities. If the reservoir is in a water body or captures catchment runoff, you may require resource consents for damming and associated activities.

4. Point(s) of take description

4.1 What are the GPS coordinates of the point(s) you propose to take water from?

Note: if there are more than two points of take, please provide these details on a separate sheet.

Point 1: NZTM 2000 E: 1,273,927.00 N: 5,010,337.000

Point 2: NZTM 2000 E: N:

4.2 Please provide photographs of the proposed point(s) of take ⊡

4.3 What is the name of the water body/ies from which the proposed take(s) is/are to occur? Royal Burn

Note: if the water body is unnamed please note this and note the water body it flows into.

4.4 If the take is from a river, stream, spring, drain or modified water body, in your application please provide a full description of the water course, including:

- [x] The average channel width and depth at various locations including at the point of take and upstream and downstream of the point of take.
- [x] Average flow water velocity including source of flow data and any changes to flow velocity above and below the point of take.
- [ ] Any flow gauging of the water body. A flow gauging report with photographs of the site and methodology to be attached.
- [x] Bed of the water body at the point of take and upstream and downstream of the point of take.

Please also answer the following:

4.4.1 What type of water body will the take/s occur from?

- [ ] River
- [x] Stream
- [ ] Modified water body
- [ ] Spring
- [ ] Drain

4.4.2 Is the water course perennial (flows all year round) or ephemeral?

- [x] Perennial
- [ ] Ephemeral

4.5 If the take is from a lake, pond or wetland please answer the following:

- [ ] Lake
- [ ] Pond
- [ ] Wetland

4.5.1 If the take is from a wetland, is the wetland classed as a Regionally Significant Wetland identified in Schedule 9 of the Regional Plan: Water for Otago?

- [ ] Yes (list the name and provide an assessment of effects on the wetland)
- [ ] No

4.5.2 Has the wetland been formed by artificial means?

- ☐ Artificial
- ☐ Natural

4.5.3 What is the surface area of the lake/pond/wetland?

4.5.4 How deep is the lake/pond/wetland?

4.5.5 Does the lake/pond/wetland have an outlet? i.e. does water flow out of it?

- ☐ Yes
- ☐ No

4.5.6 What is the main source of water that fills the lake/pond/wetland?

- ☐ Groundwater
- ☐ Springs
- ☐ Runoff from surrounding land
- ☐ Direct rainfall
- ☐ Stream/river (list name)
- ☐ Other (provide details)

5. Historical water use

5.1 Water abstracted over at least the last 5 years

Note: if you are applying to replace an existing water permit for primary allocation, or an existing deemed permit or mining privilege you must provide evidence of the amount of water abstracted under that permit for at least the last five years.

The following usage evidence is provided in support of this application:

- ☑ Water metering records, attached to this application with historical water use summarised and assessed
- ☑ Water metering records sent to Council electronically or recorded on file by Council with historical water use summarised and assessed
- ☐ Detail on alternative water use information, attached to this application

5.2 In your application please analyse and assess the historical volumes and pattern of water use based on the water use evidence.

5.3 Provide a summary of your analysis below:

a. Maximum rate of take: 28 litres per second

b. Maximum monthly volume: 30,644 cubic metres per month

c. Maximum annual volume: 163,027 cubic metres per year

5.4 For which years have these rates and volumes been recorded? 2013-2018

6. Water use and management

6.1 For what purpose(s) will the water be used?

- [x] Stock water and/or dairy shed use
- [x] Irrigation (provide detail of irrigation use in your application attached)
- [x] Community supply
- [ ] Commercial/industrial
- [ ] Other

6.2 Will the water take be managed as part of an existing water allocation committee or water management group?

- [ ] Yes (name of committee of group):
- [x] No

6.3 If yes, have you described how the allocation committee/management group operates in your application?

- [ ] Yes
- [ ] No

6.4 In your application describe any water rationing regime that operates in the catchment.

6.5 Will the take applied for be operated in accordance with the rationing regime you have described in question 6.4?

- [ ] Yes
- [ ] No

6.6 Will you or others "re-take" water from your take (i.e. via a water race)? If yes, please provide details of such re-takes in your application.

- [ ] Yes
- [x] No

7. Measuring and reporting

7.1 In your application describe the type of water metering system that is installed or proposed to be installed.

Note: If currently installed provide proof of installation or note below if proof has already been provided to Council.

7.2 Provide information in your application demonstrating that the installation of the measuring device or system shall be undertaken in accordance with Council guidelines.

Note: If the installation is not able to meet these guidelines, you need to fill out and attach to this application form a Non-Standard Installation Form for Water Measuring Devices, available on our website or through the environmental services unit of the Council.

- [✔] Tick if completed
- [ ] Tick if completing a Non-Standard Installation Form for Water Measuring Devices

7.3 Is your water measuring device or system installed or proposed to be installed at the point(s) of take?

Note: The council considers the point of take to be within a 100 metre radius of the physical take point. If your answer is No, you need to apply for a Water Measuring Exemption (WEX) by filling out Application Form 24 – Application for Exemption to use a device or system near the location from which water is taken. A fully completed Form 24 should be lodged at the same time as this application to enable dual processing.

- [ ] Yes
- [✔] No – complete an Application Form 24 – Application for Exemption

8. Location and Efficiency of Water Use

8.1 Provide details of point/area of use (include legal description(s) and grid references.

- [✔] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

8.2 Provide a description of any existing works/infrastructure in place, including value, in your application.

- [✔] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

8.3 Provide a description of proposed works/infrastructure to give effect to consent sought, including value of investment, in your application.

☑ Yes (attached to application)

☐ No (please outline reasons why this has not been provided)

8.4 Provide an assessment of the proposed use against the Aqualinc report for reasonable water requirements[1].

☑ Completed

☐ Not Completed (provide details of alternative assessment and justification for that)

8.5 If you propose to use water to irrigate land, please outline:

a. How many hectares of land will be irrigated? 48

b. What is the soil type(s) of the land being irrigated? ArrowBlackf, Barrhillf, Pigburnf.

c. What will you be irrigating (i.e. crop, pasture etc in ha)? Pasture, crop, fruit trees.

d. What is the target application rate (mm/day and mm/year)? 5-7mm/day and 900-1300/year

8.6 What type of irrigation system is proposed to be used or is currently being used?

☑ K-line

☐ Centre pivot

☑ Travelling irrigator

☐ Border-dyke/flood irrigation

☐ Other – provide details

8.7 Do you have any water distribution infrastructure in place (for example pipes, storage tanks, open races etc.)?

☑ Yes

☐ No

If yes, in your application please describe the type of infrastructure in place and how you intend to ensure that it is maintained in good working order (e.g. do you intend to have a

[1] *"Guidelines for reasonable irrigation water requirements in the Otago Region", Aqualinc, 2017. Note that while this document provides a basis for assessing efficiency of use, other matters may be applicable.*

maintenance or leak detection programme, will the scheme be managed by an external company).

Note: For deemed permits please ensure you have the right to convey water under s417 of the Resource Management Act if that conveyance crosses another party's property, prior to the expiry of the deemed permit.

8.8 Do you intend to install any water distribution infrastructure (for example pipes, storage tanks, open races etc.)?

☐ Yes

☑ No

If yes, in your application please describe the type of infrastructure to be installed and how you intend to ensure that it is maintained in good working order (e.g. do you intend to have a maintenance or leak detection programme, will the scheme be managed by an external company).

Note: For deemed permits please ensure you have the right to convey water under s417 of the Resource Management Act if that conveyance crosses another party's property, prior to the expiry of the deemed permit.

8.9 If you propose to use water for stock and/or dairy shed use – please answer the following:

Note: The Council considers the following values as efficient use of water for stock:

Sheep	*5 litres per day per head*
Beef cattle	*45 litres per day per head*
Dairy cows	*70 litres per day per head*
Deer	*15 litres per day per head*
Dairy shed use	*50 litres per day per head*

8.9.1 What type of animal and numbers of stock will be supplied with water for drinking?

Sheep

Number: 380 Water required: 5 litres/head/day

Beef cattle

Number: 40 Water required: 45 litres/head/day

Dairy cows

Number: Water required: litres/head/day

Other

Number: Water required: litres/head/day

8.9.2 How much water do you require for your dairy shed?

litres/head/day

8.9.3 If you are seeking more water for stock and/or dairy shed use than that recommended by the Council please state why this is in your application.

Note: please provide the source of any data provided. Also include details of stock water transportation if relevant.

8.10 If you propose to use water for industrial use – in your application state what type of industry will be using the water and how will the water be used.

8.11 If you propose to use water for community/domestic supply – please answer the following:

a. For households, the number of households to be supplied: 4

b. For camping grounds, the maximum number of visitors and staff per year:

c. For schools, the maximum number of students and staff per year:

d. For motel units, the number and expected occupancy:

e. Other uses (please describe):

8.12 For all uses, demonstrate in your application how have you calculated the amount of water you need?

Note: Please note that the Council will only grant volumes that have been assessed as efficient, and will assess the volumes sought for efficiency, taking into consideration the local climate, soils, and crop type.

☑ Tick if completed.

8.13 In your application please describe any other sources of water available for the property. How much water is available and what it is used for.

8.14 In your application please describe any measures you are proposing to minimise wastage of water and maximise its efficient use.

9. Assessment of Environmental Effects

Note: Pursuant to Schedule 4 of the Resource Management Act, 1991, there are a number of matters that must be addressed by an assessment of environmental effects. These matters are listed in Form 1, with additional or specific matters relating to water permits are listed below.

9.4 Provide an independent ecological assessment/instream assessment of the water body. It is recommended that all takes not from the main stem of a catchment have this assessment carried out.

☐ Yes (attached to application)

☑ No (please outline reasons why an independent ecological assessment has not been undertaken in your application)

9.5 Outline any physical effect on the locality, including any landscape and visual effect.

☑ Yes (attached to application)

☐ No (please outline reasons why this has not been provided)

9.6 Outline any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity of the point of take.

☑ Yes (attached to application)

☐ No (please outline reasons why this has not been provided)

9.7 Does the taking of water from the water body cause it to dry up during summer or does the water body naturally dry up downstream of the take?

☐ Yes

☑ No

If Yes, your application should explain approximately how far downstream from your this occurs and in approximately which month in a wet year, average year and dry year this happens.

Note: Please discuss and attach any evidence to the application (e.g. photographs of water body downstream):

9.8 Assess effects on cultural values.

☑ Yes (attached to application)

☐ No (please outline reasons why this has not been provided)

9.8 Assess any effect on other water users or other human use values.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

9.9 Describe any positive effects from the take.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

9.10 Outline the mitigation you propose in your application. This should include a consideration of the following:

- [x] A residual flow
- [x] Fish screening on water intakes
- [ ] Measures for management where there are low flows
- [ ] Flow sharing measures
- [ ] Whether base flow is necessary to maintain the water race
- [ ] Any other applicable measures

9.10 Outline if your instantaneous abstraction rate (litres per second) will be reduced by increasing the length of time over which water is taken.

- [ ] Yes (attached to application)
- [x] No

9.11 Provide a description of any possible alternative water sources or methods for undertaking the activity and why these alternatives have not been selected.

- [x] Yes (attached to application)
- [ ] No (please outline reasons why this has not been provided)

10. Consultation

10.1 Include evidence of any consultation undertaken for this application.

10.2 Identify persons affected by this application.

Aukaha

10.3 Which persons approval have been provided to the application (attach copies of approvals)?

*Note: This **may** include (but not be limited to) consultation with adjoining landowners, other consent holders in the immediate area such as downstream permit holders, iwi (e.g. Te Rūnanga O Ngāi Tahu, Aukaha, Te Ao Marama Inc.), government departments/ministries (e.g. DOC), territorial authorities and recreational associations. To reduce costs and processing times, we recommended that written approval is obtained and submitted with the application for parties which may be affected. Such approval must be unconditional to avoid notification.*

11. Statutory Assessment

Please note that in accordance with Schedule 4 of the RMA, you are also be required to provide an assessment against the relevant provisions of the following documents (if relevant):

- [✔] National Policy Statement for Freshwater Management.
- [ ] National Policy Statement for Renewable Electricity Generation.
- [✔] Resource Management (Measurement and Reporting of Water Takes) Regulations 2010.
- [✔] National Environmental Standard for Sources of Human Drinking Water.
- [ ] New Zealand Coastal Policy Statement.
- [✔] Operative Regional Policy Statement 1998, Proposed Regional Policy Statement and Partially Operative Regional Policy Statement 2019.
- [✔] Regional Plan: Water for Otago (including description of permitted activities and compliance with permitted activity standards).
- [✔] Kai Tahu ki Otago Natural Resource Management Plan 2005.
- [✔] Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 (for takes from the south side of the Clutha River/Mata-Au)
- [ ] Any other relevant plan, proposed plan and any other relevant regulations.

Resource Consent

Application Form 24

Application for exemption to use a water measuring device or system installed near (instead of at) the location from which water is taken

This application is made under the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010

Otago Regional Council

70 Stafford St
Private Bag 1954
Dunedin 9054
0800 474 082
www.orc.govt.nz

Important notes to the applicant

You must complete this Application Form 24 in full as this is a stand-alone document.
The Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 require that a water permit holder must use a water measuring device or system that is installed at the location from which water is taken. Exemption from this is possible under Regulation 10 where an alternative location is specified and approved in writing by the Otago Regional Council. The alternative location must be as near as practicable to the location from which water is taken.

A deposit of $200 towards the total application costs is required at lodgement. 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 with the application, ORC may **return it** or request further information, particularly if this exemption is being applied for in conjunction with a Water Permit as the two applications will be processed jointly.

Part A: Applicant's details

A.1 Applicant(s) name(s) in full *(include middle names)*
This is the person(s), company name, names of trustees (if the applicant is a trust) or the name of the incorporated society who currently hold the consent.

Bridget Anne Baker & John Selwyn Baker,
Philip Ronald Blakely & Mary Elizabeth Wallace, Barry John Hodges,
Troy Morrison Stewart & Vera Elizabeth Stewart

Applicant's postal address

[redacted]

Post code: [redacted]

Applicant's street address (not a PO Box number)

[redacted]

Post code: [redacted]

Applicant's contact numbers:

Home phone:
Work phone:
Email: [redacted]
Mobile: [redacted]

Part A: Applicant's details (continued)

A.2 Name of contact person (If different from A.1)

Brodie Costello

Applicant's postal address

13 Pinot Noir Drive, PO Box 302, Cromwell

Post code: 9342

Contact persons contact numbers:

Home phone:

Work phone: 0800 023 318

Email: brodie@landpro.co.nz

Mobile:

Part B: Existing water permit information

This part only applies to exemption applications for existing Deemed Permit/Water Permits. If you do not have an existing Deemed Permit/Water Permit, go to Part C.

If you have more than one permit you will need to add additional information on separate paper.

B.1 What is the Deemed Permit/Water Permit Number(s) that this application for exemption relates to?

97402

B.2 What is the expiry date of the Deemed Permit/Water Permit that this application relates to?

1 October 2021

B.3 Provide the map reference(s) or location description for the current consented location of the point(s) of take that this application for exemption relates to (as specified on the consent)

5010336N, 1273927E (approx.)

Part C: Water measuring device and point of take information

C.1 Is the water measuring device:

- ☐ Proposed to be installed
- ☑ Already installed

C.2 What type of water measuring device is proposed to be used? (i.e. mechanical, v-notch)

Mechanical

What type of data transfer do you intend to have? ☑ Datalogger ☐ Telemetry

C.3 What is the name of the water course you are to measure?

Royal Burn

C.4 What is your maximum consented rate of take?

83.3 Litres per second

Part C: Water measuring device and point of take information (continued)

C.5 Provide the GPS location (map co-ordinates) in NZTM (New Zealand Transverse Mercator projection) 2000 for the proposed, or installed, location of the water measuring device

E 1273859 N 5010213 (approx.)

C.6 How many points of take contribute to the total volume and rate of water taken, to be measured by the device or system?

1

C.7 What are the GPS locations (map co-ordinates) in NZTM 2000 for each of the points of take?

Point 1	E 1273888	N 5010279	(approx.)
Point 2	E	N	
Point 3	E	N	
Point 4	E	N	
Point 5	E	N	
Point 6	E	N	

If you have more than 6 points of take, please provide their information on a separate sheet of paper.

C.8 What is the distance between each point of take and the proposed site of the water measuring device?

Point of Take 1	approx. 70	Metres
Point of Take 2		Metres
Point of Take 3		Metres
Point of Take 4		Metres
Point of Take 5		Metres
Point of Take 6		Metres

If you have more than 6 points of take, please provide their information on a separate sheet of paper.

C.9 Please describe the location of the water measuring device from each point of take

For example: Approximately 50 metres downhill to the southwest before the diversion of water for the dairy shed.

Approximately 70 metres downhill to the south, prior to the point where the main pipeline converts to a smaller pipe for distribution.

C.10 Are there any diversions of water, or other water takes between the point of take and the water measuring device?

☑ No

☐ Yes, describe the diversions

C.11 Are there any other sources of water that add to this consented take between the point of take and the water measuring device?

☑ No

☐ Yes, describe the other sources

C.12 Please describe condition of the water race or water conveyance system (i.e.: pipes, etc) and what maintenance regime, if any, is in place

The intake sits in the main channel of the Royal Burn, and has two screens to prevent debris entering the pipeline. A sluice valve is located at the grate and the applicants visit the intake fortnightly to maintain screens and remove debris.

C.13 Why do you need to install or use your water measuring device at a location that is not at the point(s) of take? Note: Your answer here will be used in determining whether or not approval will be granted, so adequate justification is required.

The point of take is located partway up the south-facing Crown Terrace escarpment. Access to the point of take is difficult, being located in steep, cliff-type terrain. The point of take itself is a pipeline sitting in the main channel of the Royal Burn. The existing meter is installed on the pipeline on the flatter area directly below the escarpment, located directly prior to the main pipeline converting to a smaller pipe for distribution. Installing a new meter at the point of take would be difficult and potentially hazardous to access, and a meter at this location may be damaged during periods of high flow, or extreme climatic conditions in winter with ice build up at intake.

C.14 Has anyone specifically advised you that installation at the point of take is not feasible for the above stated reason?

☑ No

☐ Yes, please detail...

Who:

Company:

Part D: Location information

D.1 Please indicate on a map or aerial photograph, all of the following details:

- Each point of take, or proposed point of take;
- The location, or proposed location, of the water measuring device;
- The location of pipes and infrastructure between the two locations; and
- Roads and other landmarks.

D.2 Provide clear, identifiable photos for all of the following:

- Each point of take;
- The location, or proposed location, of the water measuring device; and
- The location of pipes and infrastructure between the two locations.

Part E: Installation information

The Otago Regional Council has standard installation specifications for water meters in piped takes.
The standard installation specification of a water meter (for piped takes) is:

The water meter shall be installed in a straight length of pipe, before any diversion of water occurs. The straight length of pipe shall be part of the pump outlet plumbing, easily accessible, have no fittings and obstructions in it.
The water meter shall be installed at least 10 times the diameter of the pipe from the pump and at least 5 times the diameter of the pipe.

E.1 Are you proposing to install your Water Meter in accordance with the Otago Regional Council standard installation specifications outlined in the paragraph above?
Yes ☐ No ☐ My water take is not piped ☐

If your answer is NO, you need to fill out and attach to this application form a ***Non-standard installation form*** for water measuring devices. This is available from www.orc.govt.nz or the council's Environmental Services unit.

Part F: Declaration

I/we hereby certify that to the best of my/our knowledge and belief, that the information given in this application is true and correct and I/we agree to pay all actual and reasonable processing costs incurred by the ORC.

Name(s) *(BLOCK CAPITALS)*

BRODIE COSTELLO

Signature (or authorised person)

Designation *(e.g. consent holder, manager, consultant)*

Consultant

Date

29/01/2020

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.

Have you ... *(please tick)*

- ☐ Answered all relevant questions on this form?
- ☐ Provided an annotated map or aerial photograph as per question D1?
- ☐ Provided clear, identifiable photos as per question D2?
- ☐ Signed and dated the declaration?
- ☐ Attached a non-standard installation form? (if required)
- ☐ Included the deposit of $200?

Print Form | Email Form

Attachment A: Aerial photograph of approximate locations of point of take, water meter, and pipes (shown by solid blue lines)

Attachment B1: Location of point of take (shown by blue square)

Attachment B2: Location of water meter

Attachment B3: Location of pipes and infrastructure between the two locations

LANDPRO

Make the most of your land

Resource Consent Application to Otago Regional Council

Prepared for the Royal Burn Water Scheme

Prepared For

Royal Burn Water Scheme

Prepared By

Landpro Ltd

13 Pinot Noir Drive

PO Box 302

Cromwell

Tel: 0800 023 318

QUALITY INFORMATION

Reference: L:\19316 - Royal Burn Water Scheme - Deemed Permit\Docs\Lodgement Package\20191004-19316-Royal Burn Water Scheme-AEE-Final.docx

Date: 5 February 2020

Prepared by: Brodie Costello

Reviewed by: Claire Perkins

Client Review: Bridget Steed

Version Number: **Final**

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We have done our best to ensure the information is fit for purpose at the date of preparation and meets the specific needs of our client. Sometimes things change or new information comes to light. This can affect our recommendations and findings.

TABLE OF CONTENTS

LIST OF APPENDICES

INTRODUCTION

Overview of Proposal

The Applicant, Royal Burn Water Scheme, holds Deemed Permit (DP) 97402 allowing surface water to be taken from the Royal Burn at a rate of 300,000 litres per hour. This application is made jointly by the shareholders of DP 97402, referred to as the 'Applicants'.

Table 1: Holders of DP 97402

Holder	Legal Description (Records of Titles are provided in Appendix F)	Property area	Land uses
Bridget Steed	Lot 1 DP 305699	29.8ha	Domestic, pasture, crop and fruit trees
John Baker	Lot 2 DP 305699	26.9ha	Domestic, pasture and crop
Barry and Mishelle Hodges	Section 1 Survey Office Plan 6650	1.4ha	Domestic and pasture
Philip Blakely and Mary Wallace	Lot 1 DP 21342 and Section 116 Block VIII Shotover Survey District	21.4ha	Pasture and crop
Vera and Troy Stewart (formerly Hill/Hodson)	Lot 2 DP 347767	11.1ha	Crop

The Applicants are seeking a replacement water permit to allow continued abstraction from the Royal Burn for the purposes of irrigation, domestic, and stock water supply. The Applicants are proposing no changes to their existing allocation or share structure.

Table 2: Royal Burn DP to be replaced

Deemed Permit No.	Water body	Take Limit (L/s)	Location (NZMS 260)	Location (NZTM)
97402	Royal Burn	83.3	F41:839 721	5010336N, 1273927E

According to ORC's consents database, the applicant is the last point of take (POT) on the Royal Burn, prior to the water body entering the Arrow River. There are several other deemed permits in the upper reaches of the Royal Burn (on the Crown Terrace), some of which have already had replacement applications lodged with ORC.

This permit expires on 1 October 2021, and a subsequent replacement water permit is sought, with a consent term of 35 years. This application is being made more than six months before the expiry of the current consent, and so the Applicants may continue to operate under the existing consent under s124 of the Resource Management Act 1991 (RMA) until the new consent is granted.

The Applicants'

Applicant Address: C/- Bridget Steed
[redacted]

Address for Service: C/- Landpro Limited
PO Box 302
Cromwell 9342

Purpose of Documentation

Pursuant to Section 88 of the RMA, this report provides an assessment of the activities effects on the environment as required by Schedule 4 of the RMA.

1. DETAILS OF PROPOSAL

1.1 Location

The properties which currently utilise water for irrigation under DP 97402 are located along the Gibbston Highway flats, running on either side of State Highway 6. The subject site occupies approximately 90ha of the more easterly extents of the Morven Ferry landscape area which exists between the south facing Crown Terrace escarpment, the Kawarau River, Morven Hill and the north facing slopes of the Ben Cruachan Range.

The location of the current take under DP 97402 is approximately 780 metres southeast of the intersection of Gibbston Highway (SH6) and Crown Range Road, Arrow Junction.

Figure 1 below shows the POT from the Royal Burn and the distribution infrastructure. A larger scheme map is available as Appendix A.

Property boundaries are as follows:

- White – Steed/Baker
- Purple – Stewart (formerly Hill/Hodson)
- Yellow – Blakely/Wallace
- Red - Hodges

Figure 1: Locations of subject properties (shown by coloured borders), and pipe infrastructure (shown by blue line) for DP 97402 (Source: Landpro/Google Earth, 2020)

1.2 Historic Use

The former mining right related to the Applicant's abstraction from the Royal Burn was given deemed permit status in 1997. This replaced a water right in substitution 3072A (sub WR1346AR), which expired on 1 October 1996. Water Race 1346 Arrowtown (WR1346AR) was initially granted on 8 June 1923.

Since obtaining deemed permit status, the water has been used for irrigation, stock, and domestic purposes. The Applicants are seeking to continue their abstraction, for these purposes.

The existing POT under DP 97402 is from the lower part of the Royal Burn. A separate POT slightly higher in the Royal Burn was used to supply the Blakely/Wallace property through a separate pipe, but this has not been used since being damaged, as discussed below. The intake structure is a pipeline sitting in the main channel of the Royal Burn. The pipe is fitted with two screens preventing debris and fauna entering the pipeline, as shown in Figure 2. Water flows down a gated pipe towards the Applicants' properties. A sluice valve is located at the intake to clean out the grate as required, and the Applicants visit the intake fortnightly to maintain screens and remove debris.

Figure 2: POT (approx. screens location shown by blue square)

The main pipeline (polyethylene, 180mm diameter) goes underground at the metering site as shown in Figure 3, which is located downhill of the POT adjacent to 1289 Gibbston Highway (Sec 1 SO 6650). At this point, the main pipeline converts to a smaller pipe (Class C pressure pipe, 100mm diameter) and is then conveyed to adjacent properties for use at various locations throughout the Applicants' properties for irrigation (via k-line and travelling irrigators), domestic, and stock water purposes. The Applicants access the POT through the neighbouring property (DP 344221). A formal easement plan has been prepared by surveyors and is currently with the legal representatives of the parties involved but is not yet issued.

Figure 3: Mechanical bulk meter site

Appendix B contains graphs showing the rates of take and volumes over the past six years. Abstraction generally takes place year-round, however the rate of take decreases significantly during winter and spring, which is outside of the irrigation season. The Applicants' rate of take was significantly lower in the spring/summer of 2016/2017 due to abstraction higher in the Royal burn.

Based on 6 years of flow data, maximum instantaneous and totalised take volumes are as follows:

Measure	Water take
Max rate of take:	28 L/s
Max daily volume:	1763 m^3
Max monthly volume:	30,644 m^3
Max annual volume:	163,027 m^3

While the Applicants are permitted to abstract up to 300,000 L/hour under DP 97402, the Applicants rate of take is limited both by rate of flow within the Royal Burn and the existing infrastructure. As their existing POT is a gravity fed pipe (a 180mm pipe at the intake, then a 100mm pipe before distribution), the Applicants rate of take is limited by the 100mm pipe diameter.

In addition, the design of the distribution system means that all water flows to the Stewarts (located at the lowest elevation) if their irrigators are running. Other properties can only irrigate when the Stewarts are not

irrigating, which allows water to backfill the main pressure pipe enough to then flow through diversion pipes for irrigation on other properties. The opportunity exists for the infrastructure and distribution system to be further developed, to provide for continuous flow to all properties for more efficient water use.

1.3 Allocation Sought

The allocation sought for the Royal Burn is based on in part on historic use and in part the flow available for abstraction, rather than a straight replacement of the existing paper allocation or historic use records.

There are two sources of increased water abstraction in the future that are not reflected in the historical take recorded by the meter in the last 6 years. Firstly, one of the property owners (Blakely/Wallace) have not used irrigation in the past decade, due to the pipe diverting water to their property being damaged in the late 2000s (located above the highway). Figure 4 shows the pipe in 2004, and the pipe removed in 2010. A letter has been provided by their irrigation consultant identifying the historical water infrastructure on the property. The property owners have recently upgraded their infrastructure in order to utilise the available water from the take and are investigating further modification to transfer their irrigation system from a travelling irrigator to K line. The increased demand in water has been projected in Table 3. Note that this increase will be in terms of monthly and annual volume only rather than instantaneous rate from the Royal Burn.

Figure 4: Water pipe location in 2004 and 2010 (pipe shown by red circle). (Source: Google Earth, 2019)

Secondly, two of the property owners (Steed/Baker and Blakely/Wallace) are intending on building houses on their respective properties, and will require domestic water supply. The Stewarts are also intending on building a house on their property, but their domestic supply is not included as part of this application, as they intend to have access from the Swift Burn scheme.

Table 3: Areas, stock, and domestic water supply requirements for the subject site

Holder	Property area	Irrigable area (approximate)	Stock numbers	Domestic use
Steed/Baker	29.8ha (Lot 1)	5.6ha	Up to 40 cows, 60 sheep	Yes
	26.9ha (Lot 2)	12.3ha		Planned

Hodges	1.4ha	0.8ha	20 sheep	Yes
Blakely/Wallace	21.4ha	18.5ha	Up to 300 sheep	Planned
Stewart (formerly Hill/Hodson)	11.1ha	11.1ha	-	N/A - Supplied by the Swift Burn
Total	**90.6ha**	**48.3ha**	**>40 cows, >380 sheep**	**Two existing, two planned**

Based on the max rate of take from existing data, abstraction from the Royal Burn has supplied irrigation for approximately 29ha (Steed/Baker, Hodges, and Stewart), domestic supply for two dwellings (Steed/Baker and Hodges), and stock water for the Steed/Baker and Hodges properties. In the future, the Applicants will need access to an adequate water supply providing irrigation for approximately 49ha (Steed/Baker, Hodges, Stewart, and Blakely/Wallace), domestic supply for four dwellings (Steed/Baker (two dwellings), Hodges, and Blakely/Wallace), and stock water for the Steed/Baker, Hodges, and Blakely/Wallace properties.

Table 4: Aqualinc reasonable demand irrigation volumes for the subject site

Historical abstraction (max rate of take) for irrigation, domestic, and stock water purposes	**28 L/s**
Aqualinc irrigation requirements (48ha of irrigable area)	23.47 L/s
Total domestic and stock use (consisting of four domestic dwellings, 45 L/head/day for up to 40 beef cattle, and 5 L/head/day for up to 380 sheep)	0.18 L/s
Total demand	**23.65 L/s**

The Applicant is seeking an allocation of 25 L/s, to reflect the total demand and allow for pressure required for conveyancing. Daily, monthly and annual volumes sought are discussed later in this report. Note that the allocation sought is based on both existing use and projected future demand for water within the command area.

2. DESCRIPTION OF EXISTING ENVIRONMENT

2.1 Land Use and Topography

According to the New Zealand Land Cover Database, the subject area is largely Short-rotation Cropland, and includes High-producing Exotic Grassland on the flatland and Mixed Exotic Shrubland on the eastern slopes. This landcover is consistent with the predominant use of this land being used for farming and lifestyle properties, and is part of a broader rural landscape in the Wakatipu Basin.

Land supported by the proposed groundwater take will total approximately 47.5ha.

2.2 Climate

The area is subject to very warm summers, and very cold winters, with frequent, often severe frosts, and occasional snowfalls. Mean average rainfall for the subject area is 650mm, according to Aqualinc.

2.3 Soils and geology

According to GNS Science, the lithology of the subject site is schist. As per Landcare Research's Smap Online tools, soils within the study area range from deep, well-drained silty loam (ArrowBlack*f*), to moderately deep, moderately well-drained loam (Barrhill*f*), to shallow, well-drained loam (Pigburn*f*).

2.4 Hydrology

2.4.1 Groundwater

The site is not situated within an aquifer or groundwater management zone as identified in the RPW.

The nearest identified aquifer is the Wakatipu Basin Aquifer, the border of which is the Arrow River, adjacent to the site as shown in Figure 5. Within the boundaries of the larger Wakatipu Basin Aquifer, the Morven Aquifer is situated east of the Arrow River and is nearest to the subject site, as shown in Figure 6.

Figure 5: Wakatipu Basin Aquifer (Source: Otago Regional Council, 2015)

Figure 6: Morven Aquifer (Source: Otago Regional Council, 2017)

2.4.2 Surface water

The Royal Burn originates from several smaller tributaries out of the Crown Range, which connect over the Crown Terrace. The Royal Burn then flows over rocky terrain and down the steep hillside, before flowing through an Applicants' property and joining the Arrow River.

Flows in spring/early summer are predominantly driven by snowmelt, while flows in summer/autumn are driven by rainfall events. The NIWA NZ River map estimates the Royal Burn to have a mean annual flow of 92.2 L/s and a MALF of 25.8 L/s. Based on this information, the Royal Burn contributes 0.2% of the Arrow River's flow (based on NIWA NZ River map MALF estimate of 1.11 cumecs).

Landpro staff sampled the Royal Burn North Branch (RBNB) in January 2018. The RBNB was gauged above the upper POT (associated with RM14.364.01 and 96285). Flow was estimated at 13 L/s, and therefore the conditions on the day likely reflected low flow conditions based on the estimated MALF for this reach of the stream. The lower POT (associated with 97029 and 3073B) was dry at the time of the site visit.

Landpro staff visited the lower part of the Royal Burn up to the POT in December 2019. As shown in Figure 7, the Royal Burn was flowing following high rainfall in the area in early December. At the time of the visit, the Royal Burn appeared to be no more than 2m wide and 0.5m deep, from approx. 50m above State Highway 6 up through to the POT.

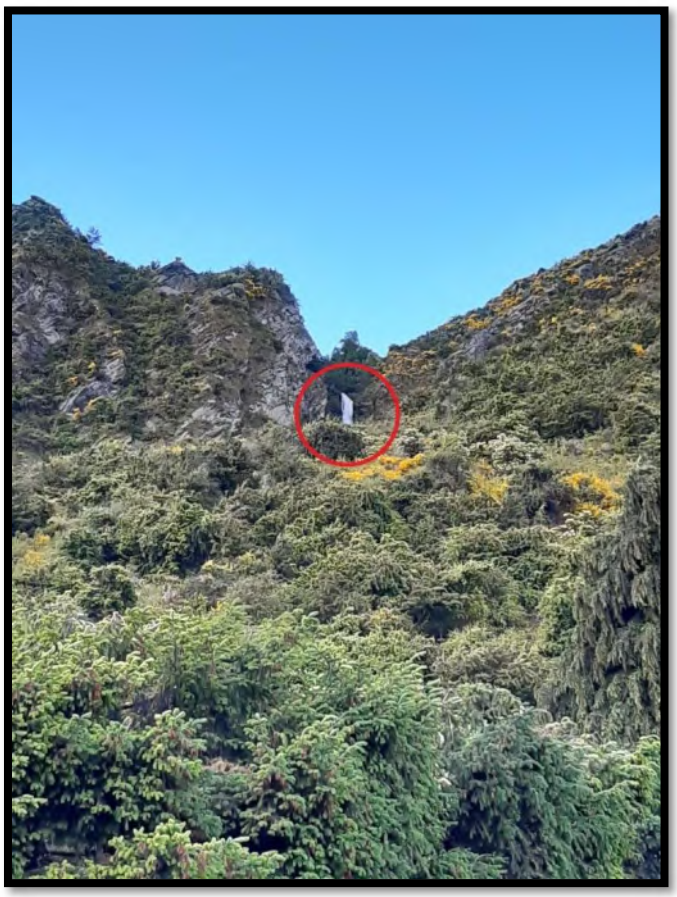


Figure 7: Royal Burn (shown by the red circle) flowing down the steep hillside after exiting the Crown Terrace

The Applicants are the last POT before the Royal Burn enters the Arrow River, with several other existing takes from the Royal Burn further upstream (Consent numbers 2006.256, 3073B, 97029.V1, 96285, RM14.364.01).

The Steed/Baker property also contains a historical dam (<100 years old), used as a pond for amenity purposes and as an emergency firefighting supply. The dam is fed via two existing swale drains which collect runoff from the escarpment, and a water line connected to the property owner's pipe from the Royal Burn take. This line is used to flush their lines and prevent the lines from freezing during winter. The dam naturally drains through dissipation.

The dam is constructed above ground and ranges from 1-1.5m depth, containing approx. 4815m^3 of water (based on 107m length x 36m width x 1.25m depth). The dam is surrounded by trees and supports waterfowl, as shown in Figure 8.

Figure 8: Dam located on Steed/Baker property

Three of the property owners additionally have water tanks on their property to store water taken from the Royal Burn for irrigation and/or domestic purposes. The Steed/Baker and Blakely/Wallace property each have a 30,000 L tank, while the Hodges property has two 25,000 L tanks.

2.5 Aquatic Ecology

The NZ Freshwater Fish Database contained no records of fish presence in the Royal Burn. The absence of fish is unsurprising given the steep, cliff-type terrain that the Royal Burn flows through, which makes it impossible for any fish to move upstream from the Arrow River, as shown in Figure 9 and 10. Landpro staff visited the site in early December and observed several steep passages below the POT (e.g. Figure 10). While Landpro staff were unable to access the base of the Royal Burn given the steep terrain, a consent-holder additionally noted that there is an approximately 1m-high bluff located at the base of the Royal Burn, directly before the confluence with the Arrow River. They also noted that while fish are very rarely observed at the confluence of the Royal Burn with the Arrow River, no fish have been observed any higher in the Royal Burn. As such, an independent ecological assessment was not undertaken.

It is unknown whether there are aquatic invertebrates present in the Royal Burn. There is visible flow from the POT through to the confluence and the Royal Burn likely provides good habitat for macroinvertebrates.

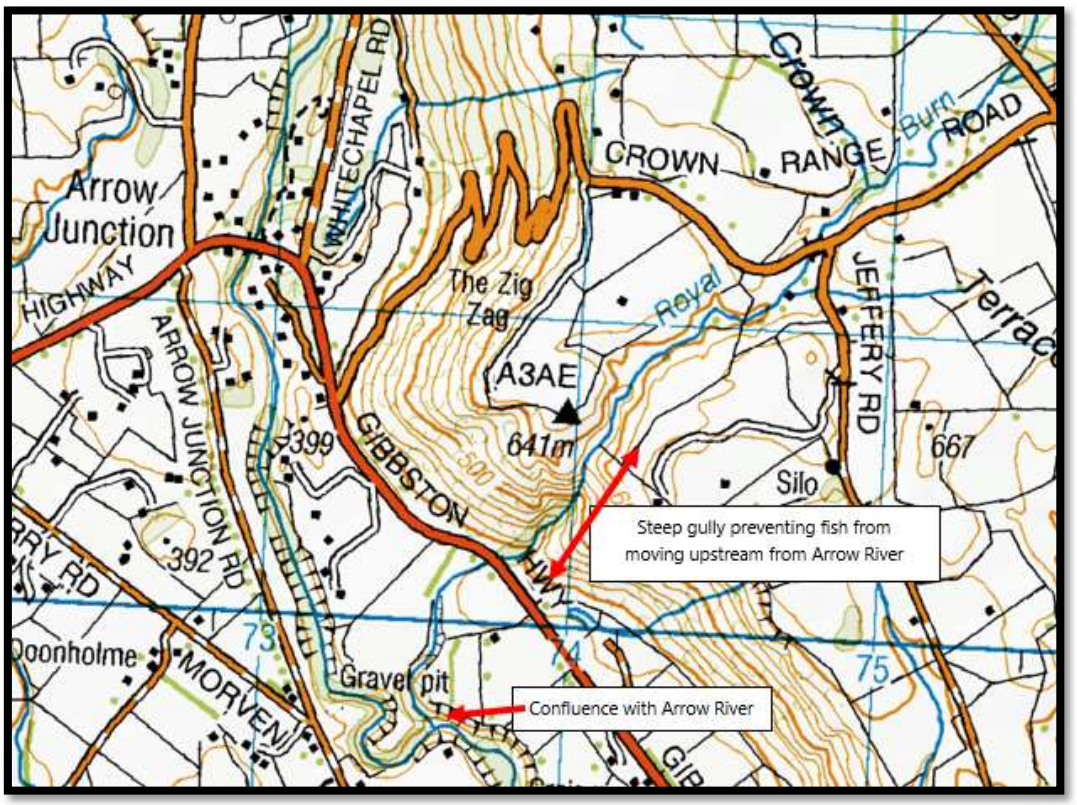


Figure 9: Map showing the Royal Burn's descent from the Crown Range prior to the confluence with the Arrow River (Source: NZ Topo50 Maps)

Figure 10: Steep passage below the POT on the Royal Burn

The Arrow River is considered to support a locally significant sports-fish fishery. Fish survey records indicate that no trout have been recorded in the Arrow River above the confluence with Soho Creek, and below the confluence a healthy presence of brown trout has been recorded, particularly within Soho Creek. Rainbow trout appear to have a restricted distribution located within the lower reaches of the Arrow River, downstream of the gorge. A diverse range of aquatic invertebrates are also present in the catchment.

The Kawarau River supports both brown trout and rainbow trout in its upper reaches, however the river is uncongenial to fish below the confluence of the Shotover River (Department of Conservation, 1996), likely due to the boisterous nature of the flows (Otago Regional Council, 2017). The NZ Freshwater Fish Database also contained no records of fish presence in the Kawarau River. The Royal Burn confluence is approximately 2500m from where the Arrow River connects to the Kawarau River.

2.6 Schedule 1 Values

The Royal Burn is not identified in Schedule 1A of the Otago Regional Water Plan as having natural values, or 1B as having water supply values. The Royal Burn is not identified in Schedule 1C as having historical places and is not identified in Schedule 1D as having Kāi Tahu values.

Schedule 1A of the RPW identifies the Arrow River as having the following values:

- *Gravel and sand bed composition of importance to resident biota;*
- *Access within the main-stem of a catchment through to the sea or a lake unimpeded by artificial means, such as weirs, and culverts;*
- *Presence of significant areas for fish spawning and development of juvenile fish;*
- *Absence of aquatic pest plants identified in the Pest Plant Management Strategy for the Otago region;*
- *Significant presence of trout; and*
- *A high degree of naturalness above 900 m above sea level.*

3. ACTIVITY CLASSIFICATION

This application seeks to replace existing consents that have primary allocation status. This activity is authorised by Rule 12.1.4.5 of the RPW:

Rule 12.1.4.5

Taking and use of surface water as primary allocation applied for prior to 28 February 1998 in catchments not listed in Schedule 2A:

(i) This rule applies to the taking of surface water, as primary allocation, in catchment areas not listed in Schedule 2A, if the taking was the subject of a resource consent or other authority:

(a) Granted before 28 February 1998; or

(b) Granted after 28 February 1998, but was applied for prior to 28 February 1998; or.

(c) Granted to replace a resource consent or authority of the kind referred to in paragraph (a) or (b).

*(ii) Unless covered by Rule 12.1.1A.1, the taking and use of surface water to which this rule applies is a **restricted discretionary** activity. The matters to which the Otago Regional Council has restricted the exercise of its discretion are set out in Rule 12.1.4.8.*

(iii) Unless covered by Rule 12.1.1A.1, the taking and use of surface water in the Waitaki catchment to which this rule applies is a restricted discretionary activity provided that by itself or in combination with any other take, use, dam, or diversions, the sum of the annual volumes authorised by resource consent, does not exceed the allocation to activities set out in Table 12.1.4.2. The matters to which the Otago Regional Council has restricted the exercise of its discretion are set out in Rule 12.1.4.8.

(iv) Takes to which this rule applies will not be subject to a minimum flow condition until the minimum flow has been determined by investigation and added to Schedule 2A by a plan change. Note: If a minimum flow has been determined for a catchment previously not listed in Schedule 2A, and that minimum flow has been set by a plan change, the catchment will then be listed in Schedule 2A and Rule 12.1.4.2 or Rule 12.1.4.4 will apply.

Rule 12.1.4.8 Restricted discretionary activity considerations

In considering any resource consent for the taking and use of water in terms of Rules 12.1.4.2 to 12.1.4.7 and 12.2.3.1A, the Otago Regional Council will restrict the exercise of its discretion to the following:

(i) The primary and supplementary allocation limits for the catchment; and

(ii) Whether the proposed take is primary or supplementary allocation for the catchment; and

(iii) The rate, volume, timing and frequency of water to be taken and used; and

(iv) The proposed methods of take, delivery and application of the water taken; and

(v) The source of water available to be taken; and

(vi) The location of the use of the water, when it will be taken out of a local catchment; and

(vii) Competing lawful local demand for that water; and

(viii) The minimum flow to be applied to the take of water, if consent is granted; and

(ix) Where the minimum flow is to be measured, if consent is granted; and

(x) The consent being exercised or suspended in accordance with any Council approved rationing regime; and

(xi) Any need for a residual flow at the point of take; and

(xii) Any need to prevent fish entering the intake and to locate new points of take to avoid adverse effects on fish spawning sites; and

(xiii) Any effect on any Regionally Significant Wetland or on any regionally significant wetland value; and

(xiv) Any financial contribution for regionally significant wetland values or Regionally Significant Wetlands that are adversely affected; and

(xv) Any actual or potential effects on any groundwater body; and

(xvi) Any adverse effect on any lawful take of water, if consent is granted, including potential bore interference; and

(xvii) Whether the taking of water under a water permit should be restricted to allow the exercise of another water permit; and

(xviii) Any arrangement for cooperation with other takers or users; and

(xix) Any water storage facility available for the water taken, and its capacity; and

(xx) The duration of the resource consent; and

(xxi) The information, monitoring and metering requirements; and

(xxii) Any bond; and

(xxiii) The review of conditions of the resource consent; and

(xxiv) For resource consents in the Waitaki catchment the matters in (i) to (xxiii) above, as well as matters in Policies 6.6A.1 to 6.6A.6.

Notification and written approvals

(a) For applications for resource consent to which this Rule applies, to take and use water from a river, the Consent Authority is precluded from giving public notification, if the application is to take and use water from:

(i) A river for which a minimum flow has been set by or under this Plan; or

(ii) A river for which it is not necessary for the Council to consider whether, if consent is granted, the taking should be subject to a condition requiring a residual flow to remain in the river at the point of take, or a condition requiring other provision for native fish, other than a condition requiring fish screening.

Other applications for resource consent to take and use water from a river may be considered without notification as allowed by the Resource Management Act.

(b) For applications for resource consent to which this rule applies, to take and use water from a water body other than a river, the Consent Authority is precluded from giving public notification.

Rule 12.3.4

*Unless prohibited by Rules 12.3.1.1 to 12.3.1.4, the damming or diversion of water is a **permitted** activity, providing:*

(a) The size of the catchment upstream of the dam, weir or diversion is no more than 50 hectares in area; and

(b) In the case of damming, the water immediately upstream of the dam is no more than 3 metres deep, and the volume of water stored by the dam is no more than 20,000 cubic metres; and

(c) In the case of diversion, the water is conveyed from one part of any lake or river, or its tributary, to another part of the same lake, river or tributary; and

(d) No lawful take of water is adversely affected as a result of the damming or diversion; and

(e) Any damming or diversion within a Regionally Significant Wetland was lawfully established prior to 2 July 2011; and

(f) There is no change to the water level range or hydrological function of any Regionally Significant Wetland; and

(g) There is no damage to fauna, or New Zealand native flora, in or on any Regionally Significant Wetland; and

(h) The damming or diversion does not cause flooding of any other person's property, erosion, land instability, sedimentation or property damage; and

(i) The damming or diversion is not within the Waitaki catchment.

The existing dam on the Steed property is a permitted activity, given the catchment area is the hillside (>23 ha) directly above the dam, the small depth and volume of the dam, and that no other takes, wetlands or properties are affected. Specific details on the dam are provided in section 2.4.2.

Overall, the water abstraction activities associated with this application are ***restricted discretionary*** activities. As discussed later in this report, there should be no requirement for a residual flow or a condition requiring provision for native fish, and so the Council is precluded from giving public notification of this consent application pursuant to Rule 12.1.4.8 (a)(ii).

4. NON-NOTIFICATION & CONSULTATION

A consent authority has the discretion whether to publicly notify an application unless a rule or National Environmental Standard (NES) precludes public notification (in which case the consent authority must not publicly notify) or section 95A(2) applies.

The effects of the activities will be no more than minor, the applicants do not request public notification and there are no rules or NES' which require the public notification of the application. In addition, there are no special circumstances relating to the application. As such, notification of the application is not necessary.

As discussed earlier in this report, the Council is precluded from giving public notification of this consent application pursuant to Rule 12.1.4.8 (a)(ii). Overall, it is considered that this application will be processed non-notified.

Clause 6(1)(f) of Schedule 4 of the RMA requires the identification of, and any consultation undertaken with, persons affected by the activity. No persons are considered to be adversely affected by the proposal, as determined by the larger assessment of environmental effects (Section 6 below). Ultimately however, Council must decide that a person is affected pursuant to Section 95E of the RMA.

There are no records of fish ever having been found in the subject creeks, and any fish in the Arrow River are unable to move up the creeks due to the step topography. The creeks do not support significant instream values or amenity values, and the activities will not significantly impact on the natural characters of the creeks. There are no downstream users that may be affected by the activities.

Aukaha are considered an affected party to the proposal, as representatives of iwi's interests in surface water abstractions.

This application has been lodged with ORC and provided to potentially affected parties at the same time. The intention behind this is to allow the ORC to determine whether any further information may be required, as any necessary further information may then assist parties forming a view on the application.

It is, therefore, concluded that there are no other parties that will be affected other than Aukaha by the proposed activities.

Overall, it is considered that this application could be processed non-notified and without the need for written approvals, depending on iwi interests.

5. ASSESSMENT OF ENVIRONMENTAL EFFECTS

In addition to the application being made in the prescribed forms and manner, Section 88 of the RMA also requires that every application for consent includes an assessment of the effects of the activity on the environment as set-out in Schedule 4 of the RMA.

5.1 Assessment of Alternatives

Aside from groundwater which is not likely to be available in sufficient quantities, the only other alternative for providing water would be from the Arrow River. To withdraw water from the Arrow River, the Applicants would have to make considerable investment to implement a new water take, to pump water uphill from the Arrow River to the Applicant's properties. In addition, drawing water from the Arrow River is far more likely to incur environmental impacts on fish and fish habitat, given the presence of trout in the Arrow River. The existing take of the Royal Burn is the most practical water take for the properties.

5.2 Effects on Instream Values

As discussed above, there are no reports of any fish species being present in the Royal Burn, and it is unlikely that the Royal Burn has been populated by fish given the steep south-facing escarpment of the Crown Terrace that the Royal Burn flows over. There is visible flow from the POT through to the confluence and this likely provides good habitat for macroinvertebrates. This visible flow will be retained under this replacement application and therefore effects on instream habitat values will be minimised.

The POT on the Royal Burn is on private farmland part way up the escarpment, and there is no public access to this area, therefore it is unlikely that will be significant noticeable effects on natural character from the proposed activities.

5.3 Available Water Allocation

Policy 6.4.2 of the RPW defines the primary allocation limit for each catchment:

> *To define the primary allocation limit for each catchment, from which surface water takes and connected groundwater takes may be granted, as the greater of:*
>
> *(a) That specified in Schedule 2A, but where no limit is specified in Schedule 2A, 50% of the 7-day mean annual low flow; or*
>
> *(b) The sum of consented maximum instantaneous, or consented 7-day, takes of:*
>
> *(i) Surface water as at:*
>
> *(1) 19 February 2005 in the Welcome Creek catchment; or*
>
> *(2) 7 July 2000 in the Waianakarua catchment; or*
>
> *(3) 28 February 1998 in any other catchment; and*
>
> *(ii) Connected groundwater as at 10 April 2010,*
>
> *less any quantity in a consent where:*
>
> *(1) In a catchment in Schedule 2A, the consent has a minimum flow that was set higher than that required by Schedule 2A.*
>
> *(2) All of the water taken is immediately returned to the source water body.*

(3) All of the water being taken had been delivered to the source water body for the purpose of that subsequent take.

(4) The consent has been surrendered or has expired (except for the quantity granted to the existing consent holder in a new consent).

(5) The consent has been cancelled (except where the quantity has been transferred to a new consent under Section 136(5)).

(6) The consent has lapsed.

This proposal seeks to take water that is within the allocation limit as defined by Policy 6.4.2(b)(i)(3), as no more water is being sought than what is currently consented. Overall, this proposal will not seek to exceed the current primary allocation limits in the Royal Burn.

5.4 Minimum and Residual Flows

Policy 6.4.7 of the RPW states:

The need to maintain a residual flow at the point of take will be considered with respect to any take of water, in order to provide for the aquatic ecosystem and natural character of the source water body.

As discussed earlier in this report, there are no reports of any fish species being present in the Royal Burn, and it is unlikely that the watercourse will be inhabited by fish and so existing aquatic ecosystem values are limited.

The POT on the Royal Burn is on private farmland part way up the escarpment, and there is no public access to this area, therefore it is unlikely that will be meaningful enhancement of natural character achieved by maintaining a higher residual flow. In accordance with the above policy, the need to maintain a residual flow has been considered and it is concluded that a visible residual flow would provide good habitat for macroinvertebrates, as well as minor amenity value for the property owners.

At the time of writing this report, ORC was in the process of preparing for the notification of a plan change that would set a minimum flow for the Arrow River for the maintenance of amenity values, recreational values. aquatic ecosystems, natural character and other values associated with the Arrow River. It is expected that any consents granted prior to this being operative would be reviewed in accordance with Policy 6.4.5(d) to apply the minimum flow, should it be required on this permit, given the Royal Burn does not contribute flow to the Arrow River minimum flow site at the State Highway bridge. It is noted that when the Arrow River is below the minimum flow, water may still be taken at the applicants' point of take for domestic and stock drinking water purposes under s14 of the RMA.

5.5 Efficient Use

An assessment of reasonable irrigation demand has been undertaken for the total command area in accordance with Aqualinc 2017[1]. This involved mapping the soil types across the command area and measuring the area of different soil types. The resulting map is shown at Appendix D. The closest PAW

[1] McIndoe I, Brown P, Rajanayaka C, KC. B, 2017. Guidelines for Reasonable Irrigation Water Requirements in the Otago Region. Otago Regional Council, 2. Aqualinc Research Limited.

values for the different soils at the appropriate depth were extracted from S-Maps online and entered into the table shown at Appendix E. Aqualinc was then used to determine the peak daily and monthly demand, plus the 90% annual demand for irrigation purposes.

The calculated daily, monthly and annual water demand is summarised in the table below.

Table 5: Demand calculated for the command area

	Daily (m^3)	Monthly (m^3)	Annual (m^3) (90%ile)
Demand for Irrigation only (Aqualinc)	2,028	62,777	304,227
Base Flows (domestic and stock water)	16	496	5,840
Volumes Sought	**2,044 (average)**	**63,273**	**310,117**

The Aqualinc calculations indicate that the reasonable demand for irrigation on the properties is well below that which is permitted under DP 97402. This is largely due to the existing water take infrastructure, which limits the potential take by the applicants. Additional allowance will be required to allow for pressure for conveyancing.

Most of the existing consents do not have daily, monthly or annual limits, so this is a significant reduction in the default current allocation of 7,197 m^3/day, 223,107 m^3/month and 2,677,284m^3/yr. The review condition included in the proposed consent conditions below will ensure that if the water allocated to the regime is not being used then the limits on the water permits can be adjusted.

Note:

Approximately 41ha of the subject site did not contain S-map data, this largely being the steep hill areas south of the Crown Terrace. This area is largely too steep to allow for irrigation, and as such was excluded from the area included in the Aqualinc modelling.

5.6 Effects on Other Users

There are no authorised surface water takes from the Royal Burn downstream from the Applicants' POT.

The Royal Burn is also not suitable for recreation activities such as swimming, fishing or kayaking so the abstraction will not affect recreational users.

All permits on the Royal Burn have equal priority.

5.7 Monitoring

The take will continue to be monitored as it has been, using the existing meter below the point of take.

5.8 Proposed Consent Conditions

The following conditions of consent are proposed to ensure that any potential adverse effects from the proposed activities will be appropriately managed:

- Purpose – to take water as primary allocation from the Royal Burn for the irrigation, domestic and stock drinking water purposes.
- This permit shall not commence until Deemed Permit 97402 has been surrendered or has expired.
- The rate of take at the Royal Burn point of take at NZTM2000 1273927E 5010336N shall not exceed 25 L/s.
- The total volume of water taken under this permit shall not exceed:
    - 63,273 m^3/month; and
    - 310,117 m^3/year.
- A visible residual flow in the Royal Burn shall be maintained downstream of the intake to the confluence with the Arrow River.
- ORC's standard water metering condition.
- The consent holder shall take all practicable steps to ensure that:
    - There is no leakage from pipes and structures;
    - The use of water is confined to the target areas;
    - There is no runoff of irrigation water in irrigated areas ether on site or off site.
- ORC's standard review condition.
- *Note: When the Arrow River is flowing below the minimum flow as adopted in the Regional Plan: Water, the consent holders may still take water for domestic and stock water needs under section 14 of the Resource Management Act, 1991, or any subsequent equivalent regulatory provisions.*

Fish screens are not being proposed at the point of take because there is no reason to believe that there are any fish in the Royal Burn or near the POT, and because two small debris screens are already in place over the POT. Note that no daily maximum has been proposed. Allowing the applicant some flexibility in the way that water is taken by allowing the maximum possible rate on some days and less on other days, as long as the monthly maximum is not exceeded, will not result in any adverse effects on the environment and will still ensure that water is used efficiently.

5.9 Other Assessment Matters

In accordance with Clause 7 of Schedule 4 of the RMA the following provides an assessment of the activity's effects on the environment:

6. STATUTORY CONSIDERATIONS

Schedule 4 of the RMA requires that an assessment of the activity against the matters set out in Part 2 and any relevant provisions of a document referred to in Section 104 of the RMA is provided when applying for a resource consent for any activity. These matters are assessed as follows.

6.1 Part 2 of the RMA

The proposal is consistent with the purpose and principles of the RMA, as outlined in Section 5. The proposal will have less than minor effect on the ability of the Royal Burn to meet the reasonably foreseeable needs of future generations, or on the life-supporting capacity of the Royal Burn and any ecosystems associated with them. The proposal will ensure that adverse effects on the environment are avoided, remedied or mitigated.

There are no matters of national importance under Section 6 of the RMA that will be affected by the proposal. The proposal is also consistent with the requirements of Section 7 of the RMA, with particular regard given to the efficient use of natural resources, intrinsic values of ecosystems, and the maintenance and enhancement of the quality of the environment. Regarding Section 8, the proposed activity is not inconsistent with the principles of the Treaty of Waitangi.

Overall, the activity is considered to be consistent with Part 2 of the RMA, given the minor nature of the activities and the proposed mitigation.

6.2 Section 104(1)(b) of the RMA

In accordance with Schedule 4 of the RMA, an assessment of the activity against the relevant provisions of a document referred to in 104(1)(b) of the RMA must be included in an application for resource consent. Documentation in this section are noted as being:

(i) National Policy Statement for Freshwater Management, 2014;
(ii) Resource Management (Measurement and Reporting of Water Takes) Regulations, 2010;
(iii) National Environmental Standard for Sources of Human Drinking Water, 2007
(iv) Partially Operative Regional Policy Statement for Otago, 2019;
(v) Proposed Regional Policy Statement for Otago, 2016;
(vi) Regional Plan: Water for Otago, 2004; and
(vii) Kāi Tahu ki Otago Natural Resource Management Plan, 2005; and Ngāi Tahu ki Murikiku Natural Resource and Environmental Iwi Management Plan, 2008.

Under the RMA, regional plans need to give effect to NPSs, NESs and RPSs. For an application of this scale, an assessment of the application against the regional plans is adequate as these plans ultimately give effect to the higher order statutory instruments. However, for completeness some of these have been included below.

6.2.1 National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management 2014 (NPS-FM) sets objectives and policies for the management of freshwater quality and quantity, emphasising the need for safeguarding of the values of

freshwater, avoiding over-allocation, improving efficiency and providing reasonable opportunity for Iwi and hapū involvement in overall freshwater management including planning and decision-making. The following policies, which give effect to the NPS's objectives, are of most relevance to this application for resource consent.

Policy B5
By every regional council ensuring that no decision will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the freshwater management unit.

Policy B6
By every regional council setting a defined timeframe and methods in regional plans by which overallocation must be phased out, including by reviewing water permits and consents to help ensure the total amount of water allocated in the freshwater management unit is reduced to the level set to give effect to Policy B1.

Policy B8
By every regional council considering, when giving effect to this national policy statement, how to enable communities to provide for their economic well-being, including productive economic opportunities, while managing within limits.

The proposal sees a significant reduction in the current level of allocation in terms of instantaneous, monthly and annual allocation. The water sought is within the allocation limits defined by Policy 6.4.2 of the RPW. The proposal will enable land owners to continue to operate, which will in turn benefit the economic well-being of the community through the provision of productive economic opportunities.

The current and proposed policies in the RPS and RPW are being reviewed to ensure they meet the requirements of the NPS. Consideration of these documents in light of the activities proposed is given below.

6.2.2 Resource Management (Measurement and Reporting of Water Takes) Regulations

Section 4(1) of the Regulations states that "These regulations apply only to a water permit that allows fresh water to be taken at a rate of 5 litres/second or more." Because the proposed takes are greater than 5 L/s, the activity must be in accordance with the Regulations. Specifically, the Regulations require the following:

- That the permit holder "keep records that provide a continuous measurement of the water taken under a water permit, including water taken in excess of what the permit allows." As a minimum, this typically means taking measurements of the volume of water taken each day.
- The water measurement device must be verified as accurate by a suitably qualified person:
    - Before the end of a permit's first water year; and
    - Every 5 years thereafter.
- The permit holder must provide records that cover each water year of the permit to the regional council that granted the permit, no later than 1 month after the end of the water year.
- The regional council that granted a water permit may, at its discretion, grant approval to the permit holder to keep records using a device or system that is installed as near as practicable to the location from which water is taken under the permit (instead of at that location).

The proposal is consistent with the requirements of the Regulations, with the applicant's abstraction record indicating ongoing adherence to the Regulations with no proposed change to this system of water measurement and reporting.

6.2.3 National Environmental Standard for Sources of Human Drinking Water

The nearest bore used to provide human drinking water (F41/0441) is located approximately 850m away from the POT. A groundwater take permit (99402) providing a community water supply to 6 properties is located slightly closer at 840m from the POT, but this permit has expired.

The proposal is expected to have no discernible effect on water quality, particularly when it is considered that it is effectively an existing activity, and that the water take location is several hundred metres from the nearest bores. Consequently, the *National Environmental Standard for Sources of Human Drinking Water* is not relevant.

6.2.4 Partially Operative Regional Policy Statement for Otago

The following policies from the 2019 Partially Operative Regional Policy Statement are relevant to this application. Policies in this version of the plan (January 2019) that have not yet been made operative have been omitted.

Table 2: Relevant policies from the Partially Operative Regional Policy Statement for Otago, 2019

Policy		Comments
2.2.1	*Manage the natural environment to support Kāi Tahu wellbeing by all of the following:* *a) Recognising and providing for their customary uses and cultural values in Schedules 1A and B; and* *b) Safe-guarding the life-supporting capacity of natural resources.*	The proposal will see a reduction in allocated water from the Royal Burn, thereby securing the life-supporting capacity of this creek. The take from the Royal Burn is relatively minor and therefore unlikely to adversely impact Kāi Tahu values as they relate to this river. Potential future upgrades to infrastructure should ensure water is used more efficiently, and the proposed residual flow will ensure that macroinvertebrate values are protected. In general, it is envisaged that Kāi Tahu values, as detailed in Schedule 1A, will be protected and potentially enhanced as a result of the proposal. No Schedule 1B sites are located within the study area.
2.2.2	*Recognise and provide for the protection of wāhi tūpuna, by all of the following:*	Consideration has been given to Schedule 1C sites of cultural

	a) Avoiding significant adverse effects on those values that contribute to the identified wāhi tūpuna being significant; *b) Avoiding, remedying, or mitigating other adverse effects on the identified wāhi tūpuna;* *c) Managing the identified wāhi tūpuna sites in a culturally appropriate manner.*	significance (wāhi tupuna). No specific wāhi tupuna sites are known within the study area. The Royal Burn may have some significance in terms of Wāhi Mahika kai (food and natural material gathering sites) and Wāi paripari (cliff areas).
3.1.1	*Safeguard the life-supporting capacity of fresh water and manage fresh water to:* *a) Maintain good quality water and enhance water quality where it is degraded, including for:* *i. Important recreation values, including contact recreation; and, ii. Existing drinking and stock water supplies;* *b) Maintain or enhance aquatic:* *i. Ecosystem health;* *ii. Indigenous habitats; and,* *iii. Indigenous species and their migratory patterns.* *c) Avoid aquifer compaction and seawater intrusion;* *d) Maintain or enhance, as far as practicable:* *i. Natural functioning of rivers, lakes, and wetlands, their riparian margins, and aquifers;* *ii. Coastal values supported by fresh water;* *iii. The habitat of trout and salmon unless detrimental to indigenous biological diversity; and* *iv. Amenity and landscape values of rivers, lakes, and wetlands;* *e) Control the adverse effects of pest species, prevent their introduction and reduce their spread;* *f) Avoid, remedy or mitigate the adverse effects of natural hazards, including flooding and erosion; and, g) Avoid, remedy or mitigate adverse effects on existing infrastructure that is reliant on fresh water.*	The ecological and hydrological features of the Royal Burn are discussed in Section 2, while the potential effects on these features, and subsequent mitigation proposed, are discussed in Section 5. Water quality is unlikely to be affected by the activities. Kāi Tahu and other cultural values have been assessed in Section 6.2.7 of this document. Recreational values are addressed in Section 5.5, aesthetic and landscape values will be unaffected by the proposal, and no flooding, erosion, or other natural hazards will be caused or exacerbated by the activities.
3.1.2	*Manage the beds of rivers, lakes, wetlands, their margins, and riparian vegetation to:* *a) Safeguard the life supporting capacity of fresh water;* *b) Maintain good quality water, or enhance it where it has been degraded;* *c) Maintain or enhance bank stability;*	See response to 3.1.1 above.

d)Maintain or enhance ecosystem health and indigenous biological diversity; *e) Maintain or enhance, as far as practicable:* *i. Their natural functioning and character; and* *ii. Amenity values;* *f) Control the adverse effects of pest species, prevent their introduction and reduce their spread; and,* *g) Avoid, remedy or mitigate the adverse effects of natural hazards, including flooding and erosion.*	
3.1.3 Manage the allocation and use of fresh water by undertaking all of the following: *a) Recognising and providing for the social and economic benefits of sustainable water use;* *b) Avoiding over-allocation, and phasing out existing over-allocation, resulting from takes and discharges; c) Ensuring the efficient allocation and use of water by:* *i) Requiring that the water allocated does not exceed what is necessary for its efficient use;* *ii) Encouraging the development or upgrade of infrastructure that increases use efficiency;* *iii. Providing for temporary dewatering activities necessary for construction or maintenance.*	An evaluation of efficient water use in relation to the proposal is provided in Section 5.5.
3.1.4 Manage for water shortage by undertaking all of the following: *a) Encouraging land management that improves moisture capture, infiltration, and soil moisture holding capacity.* *b) Encouraging collective coordination and rationing of the take and use of water when river flows or aquifer levels are lowering, to avoid breaching any minimum flow or aquifer level restriction to optimise use of water available for taking;* *c) Providing for water harvesting and storage, subject to allocation limits and flow management, to reduce demand on water bodies during periods of low flows.*	An evaluation of efficient water use in relation to the proposal is provided in Section 5.5. As abstraction from the Royal Burn is an integrated system, water use can be coordinated and prioritised to those sources which are more capable of providing water – meaning allocation limits should never be breached.
3.1.13 Encourage, facilitate and support activities that contribute to the resilience and enhancement of the natural environment, by one or more of the following where applicable: *a) Improving water quality and quantity;*	Maintaining a residual flow will protect habitat for macroinvertebrates, which is particularly important given there is little evidence to indicate that no

b) Protecting or restoring habitat for indigenous species; *c) Regenerating indigenous species;* *d) Mitigating natural hazards;* *e) Protecting or restoring wetlands;* *f) Improving the health and resilience of:* *i. Ecosystems supporting indigenous biological diversity;* *ii. Important ecosystem services, including pollination; g) Improving access to rivers, lakes, wetlands and their margins, and the coast;* *h) Buffering or linking ecosystems, habitats and areas of significance that contribute to ecological corridors; i) Controlling pest species.*	predatory fish are present in the Royal Burn.
4.2.2 Ensure Otago's people and communities are able to mitigate and adapt to the effects of climate change, over no less than 100 years, by all of the following: *a) Taking into account the effects of climate change, including by using the best relevant climate change data; and* *b) Applying a precautionary approach when assessing and managing the effects of climate change where there is scientific uncertainty and potentially significant or irreversible effects; and* *c) Encouraging activities that assist to reduce or mitigate the effects of climate change; and* *d) Encouraging system resilience.*	The uncertainty of the effects of climate change are such that providing future water security to the applicant, both in terms of sufficient volume and duration, is critical to the ongoing operation of the various properties within the command area.
5.2.1 Recognise all of the following elements as characteristic or important to Otago's historic heritage: *a) Residential and commercial buildings;* *b) Māori cultural and heritage values;* *c) 19th and early 20th century pastoral sites;* *d) Early surveying, communications and transport, including roads, bridges and routes;* *e) Early industrial historic heritage, including mills and brickworks;* *f) Gold and other mining systems and settlements;* *g) Dredge and ship wrecks;*	As deemed permits are based on historic mining privileges and water race licences, they may have some heritage value as remnants of Central Otago's gold mining heritage. In this case, the original pipe from the water take is still present, and it will remain in its existing location beside the Royal Burn.

	h) Coastal historic heritage, particularly takata whenua occupation sites and those associated with early European activity such as whaling; *i) Memorials;* *j) Trees and vegetation.*	
5.3.1	*Manage activities in rural areas, to support the region's economy and communities, by:* *a) Enabling primary production and other rural activities that support the rural economy; and* *b) Providing for mineral exploration, extraction and processing; and* *c) Minimising the loss of significant soils; and* *d) Restricting the establishment of activities in rural areas that may lead to reverse sensitivity effects; and* *e) Minimising the subdivision of productive rural land into smaller lots that may result in rural residential activities; and* *f) Providing for other activities that have a functional need to locate in rural areas, including tourism and recreational activities that are of a nature and scale compatible with rural activities.*	Replacement of the applicant's deemed permit with a sufficient rate of take will ensure the farming and other rural activities that take place can continue into the future. This will also help to minimise any chance of future subdivision of productive rural land. Water use is already via efficient means (k-line and travelling irrigator) within the scheme meaning the proposal does not pose any risk to soil health.
5.4.3	*Apply a precautionary approach to activities where adverse effects may be uncertain, not able to be determined, or poorly understood but are potentially significant or irreversible.*	Due to reliable historic abstraction records and a long history of use, much of the potential adverse effects associated with the proposal will have been captured within Section 5 of this document. Where information gaps occur, Council has the ability to review consent conditions and adjust methods or approaches to better manage adverse effects.

6.2.5 Proposed Regional Policy Statement for Otago

The following policies from the 2015 Proposed Regional Policy Statement are relevant to this application for consent replacements. Only those policies that have not been directly superseded by operative policies have been included.

Table 3: Relevant policies from the Proposed Regional Policy Statement for Otago, 2015

Policy	Comments

1.1.2	*Ensure that local authorities exercise their functions and powers, to:* *a) Accord Kāi Tahu a status distinct from that of interest groups and members of the public, consistent with their position as a Treaty partner; and,* *b) Involve Kāi Tahu in resource management decision-making processes and implementation; and* *c) Take into account Kāi Tahu views in resource management decision-making processes and implementation, particularly regarding the relationship of their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taoka; and* *d) Ensure Kāi Tahu have the prerogative to:* *i. Identify their relationship with their ancestral lands, water, sites, wāhi tapu, and other taoka; and* *ii. Determine how best to express that relationship; and* *e) Ensure Kāi Tahu are able to exercise kaitiakitaka; and* *f) Ensure that district and regional plans:* *i. Give effect to the Ngāi Tahu Claims Settlement Act 1998; and* *ii. Recognise and provide for statutory acknowledgement areas, as detailed in Schedule 2; and* *iii. Provide for other areas in Otago that are recognised as significant to Kāi Tahu in a manner similar to that prescribed for statutory acknowledgement areas.*	Kāi Tahu have been given due consideration as a stakeholder in Section 4. Applicable provisions of the Kāi Tahu ki Otago Natural Resource Management Plan as they relate to this application have also been considered below.
2.1.1	*Recognise freshwater values, and manage freshwater, to:* *a) Support healthy ecosystems in all Otago aquifers, and rivers, lakes, wetlands, and* *their margins; and* *b) Retain the range and extent of habitats provided by freshwater; and* *c) Protect outstanding water bodies and wetlands; and* *d) Protect migratory patterns of freshwater species, unless detrimental to indigenous biodiversity; and* *e) Avoid aquifer compaction, and seawater intrusion in aquifers; and* *f) Maintain good water quality, including in the coastal marine area, or enhance it where it has been degraded; and*	The ecological and hydrological features of the Royal Burn are discussed in Section 2, while the potential effects on these features, and subsequent mitigation proposed, are discussed in Section 5. Water quality is unlikely to be affected by the activities. Kāi Tahu and other cultural values have been assessed above and below. Recreational values are addressed in Section 5.6, aesthetic and landscape values will be unaffected by the proposal, and no flooding, erosion, or other natural hazards will be caused or exacerbated by the activities. Replacement of the

g) Maintain or enhance coastal values supported by freshwater values; and *h) Maintain or enhance the natural functioning of rivers, lakes, and wetlands, their riparian margins, and aquifers; and* *i) Retain the quality and reliability of existing drinking water supplies; and* *j) Protect Kāi Tahu values; and* *k) Provide for other cultural values; and* *l) Protect important recreation values; and* *m) Maintain the aesthetic and landscape values of rivers, lakes, and wetlands; and* *n) Avoid the adverse effects of pest species, prevent their introduction and reduce their spread; and* *o) Mitigate the adverse effects of natural hazards, including flooding and erosion; and* *p) Maintain the ability of existing infrastructure to operate within their design parameters.*	applicant's permit will enable them to continue operating their existing infrastructure within their design parameters.
2.1.2 Recognise the values of beds of rivers and lakes, wetlands, and their margins, and manage them to: *a) Protect or restore their natural functioning; and* *b) Protect outstanding water bodies and wetlands; and* *c) Maintain good water quality, or enhance it where it has been degraded; and* *d) Maintain ecosystem health and indigenous biodiversity; and* *e) Retain the range and extent of habitats supported; and* *f) Maintain or enhance natural character; and* *g) Protect Kāi Tahu values; and* *h) Provide for other cultural values; and* *i) Maintain their aesthetic and amenity values; and* *j) Avoid the adverse effects of pest species, prevent their introduction and reduce their spread; and* *k) Mitigate the adverse effects of natural hazards, including flooding and erosion; and* *l) Maintain bank stability.*	Much of this policy is also reflected in Policy 2.1.1, which is discussed above.
2.1.6 Recognise the values of ecosystems and indigenous biodiversity, and manage ecosystems and indigenous biodiversity, to:	The ecosystem values of the Royal Burn are discussed in Section 2, while the potential effects on these values

a) Maintain or enhance ecosystem health and indigenous biodiversity; and *b) Maintain or enhance areas of predominantly indigenous vegetation; and* *c) Buffer or link existing ecosystems; and* *d) Protect important hydrological services, including the services provided by tussock grassland; and* *e) Protect natural resources and processes that support indigenous biodiversity; and* *f) Maintain habitats of indigenous species that are important for recreational, commercial, cultural or customary purposes; and* *g) Protect biodiversity significant to Kāi Tahu; and* *h) Avoid the adverse effects of pest species, prevent their introduction and reduce their spread.*	and subsequent mitigation measures proposed are provided in Section 5.
2.1.7 Recognise the values of natural features, landscapes, seascapes and the coastal environment are derived from the following attributes, as detailed in Schedule 4: *a) Biophysical attributes, including:* *i. Natural science factors;* *ii. The presence of water;* *iii. Vegetation (indigenous and introduced);* *iv. The natural darkness of the night sky;* *b) Sensory attributes, including:* *i. Legibility or expressiveness;* *ii. Aesthetic values;* *iii. Transient values, including nature's sounds;* *iv. Wild or scenic values;* *c) Associative attributes, including:* *i. Whether the values are shared and recognised;* *ii. Cultural and spiritual values for Kāi Tahu;* *iii. Historical and heritage associations.*	The values of applicable natural features potentially affected by the proposal (namely the watercourses) have been recognised in Section 2.

3.1.1 Recognise the natural and physical environmental constraints of an area, the effects of those constraints on activities, and the effects of those activities on those constraints, including: *a) The availability of natural resources necessary to sustain the activity; and* *b) The ecosystem services the activity is dependent on; and* *c) The sensitivity of the natural and physical resources to adverse effects from the proposed activity/land use; and* *d) Exposure of the activity to natural and technological hazard risks; and* *e) The functional necessity for the activity to be located where there are significant constraints.*	The existing natural environment as it relates to the proposal is examined in Section 2 of this document, while the effects of the activities on the natural environment are assessed in Section 5.

6.2.6 Regional Plan: Water for Otago

The following policies, which give effect to the plan's objectives, are relevant to this application for resource consent.

Table 8: Relevant policies from the Regional Plan: Water for Otago

Policy	Comments
5.4.1 To identify the following natural and human use values supported by Otago's lakes and rivers, as expressed in Schedule 1: *(a) Outstanding natural features and landscapes;* *(b) Areas with a high degree of naturalness;* *(c) Areas of significant indigenous vegetation, significant habitats of indigenous fauna, and significant habitats of trout and salmon;* *(d) Ecosystem values;* *(e) Water supply values;* *(f) Registered historic places; and* *(g) Spiritual and cultural beliefs, values and uses of significance to Kai Tahu.*	The Royal Burn does not feature in Schedule 1A of the RPW, and no other Schedule 1 values directly relate to this activity.
5.4.2 In the management of any activity involving surface water, groundwater or the bed or margin of any lake or river, to give priority to avoiding, in preference to remedying or mitigating: *(1) Adverse effects on:* *(a) Natural values identified in Schedule 1A;*	The Royal Burn does not feature in the Schedules of the RPW and the proposal will not exacerbate flooding, erosion, land instability or property damage.

(b) Water supply values identified in Schedule 1B; *(c) Registered historic places identified in Schedule 1C, or archaeological sites in, on, under or over the bed or margin of a lake or river;* *(d) Spiritual and cultural beliefs, values and uses of significance to Kai Tahu identified in Schedule 1D;* *(e) The natural character of any lake or river, or its margins;* *(f) Amenity values supported by any water body; and* *(2) Causing or exacerbating flooding, erosion, land instability, sedimentation or property damage.*	
5.4.3 In the management of any activity involving surface water, groundwater or the bed or margin of any lake or river, to give priority to avoiding adverse effects on: *(a) Existing lawful uses; and* *(b) Existing lawful priorities for the use, of lakes and rivers and their margins.*	There are no other lawful users that may be affected by the proposal.
5.4.4 To recognise Kai Tahu's interests in Otago's lakes and rivers by promoting opportunities for their involvement in resource consent processing.	The Kāi Tahu ki Otago Natural Resource Management Plan (NRMP) is considered later in this report.
5.4.8 To have particular regard to the following features of lakes and rivers, and their margins, when considering adverse effects on their natural character *(a) The topography, including the setting and bed form of the lake or river;* *(b) The natural flow characteristics of the river;* *(c) The natural water level of the lake and its fluctuation;* *(d) The natural water colour and clarity in the lake or river;* *(e) The ecology of the lake or river and its margins; and*	The natural flow characteristics of the subject creeks are discussed earlier in this report. The abstraction of water will undeniably have some influence on the natural flow regime of the creek, however, there are unlikely to be any adverse effects resulting from this given that the low instream values present.

(f) The extent of use or development within the catchment, including the extent to which that use and development has influenced matters (a) to (e) above.	
5.4.9 To have particular regard to the following qualities or characteristics of lakes and rivers, and their margins, when considering adverse effects on amenity values: *(a) Aesthetic values associated with the lake or river; and* *(b) Recreational opportunities provided by the lake or river, or its margins.*	Abstraction of water from the Royal Burn in the height of summer may influence the length of time that the Royal Burn experiences low flows, however, no adverse effects are anticipated from this, as discussed earlier in this report. Furthermore, the creek is located on private land and does not present recreational opportunities.
5.4.12 To promote the establishment of, and support, appropriate water user groups to assist in the management of water resources.	The current users of the water essentially operate like a water management group, with more than one property being serviced by the scheme. This results in a far greater management of the potential adverse effects of surface water abstraction when compared to each landowner operating a separate take.
6.4.0 To recognise the hydrological characteristics of Otago's water resources, including behaviour and trends in: *(a) The levels and flows of surface water bodies; and* *(b) The levels and volumes of groundwater; and* *(c) Any interrelationships between adjoining bodies of water, when managing the taking of water.*	The hydrological regime of the subject creeks is discussed earlier in this report.
6.4.0A To ensure that the quantity of water granted to take is no more than that required for the purpose of use taking into account: *(a) How local climate, soil, crop or pasture type and water availability affect the quantity of water required; and* *(b) The efficiency of the proposed water transport, storage and application system.*	An assessment of the efficiency of the take is discussed earlier in this report.
6.4.0B To promote and support shared use and management of water that:	The scheme allows for extensive sharing of suitable infrastructure and allow the applicants

(a) Allows water users the flexibility to work together, with their own supply arrangements; or *(b) Utilises shared water infrastructure which is fit for its purpose.*	to ensure that water users work together under their own supply arrangements.
6.4.0C To promote and give preference, as between alternative sources, to the take and use of water from the nearest practicable source.	The proposal seeks to enable the continued taking of water from the nearest practicable source.
6.4.1 To enable the taking of surface water, by: *(a) Defined allocation quantities; and* *(b) Provision for water body levels and flows, except when:* *(i) The taking is from Lakes Dunstan, Hawea, Roxburgh, Wanaka or Wakatipu, or the main stem of the Clutha River/Mata-Au or Kawarau Rivers.* *(ii) All of the surface water or connected groundwater taken is immediately returned to the source water body.* *(iii) Water is being taken which has been delivered to the source water body for the purpose of that subsequent take.*	The proposal seeks to take water that is within the current primary allocation limits.
6.4.2 To define the primary allocation limit for each catchment, from which surface water takes and connected groundwater takes may be granted, as the greater of: *(a) That specified in Schedule 2A, but where no limit is specified in Schedule 2A, 50% of the 7-day mean annual low flow; or* *(b) The sum of consented maximum instantaneous, or consented 7-day, takes of:* *(i) Surface water as at:* *(1) 19 February 2005 in the Welcome Creek catchment; or* *(2) 7 July 2000 in the Waianakarua catchment; or* *(3) 28 February 1998 in any other catchment; and* *(ii) Connected groundwater as at 10 April 2010,*	The proposal seeks to take water that is within the current primary allocation limits.

less any quantity in a consent where: *(1) In a catchment in Schedule 2A, the consent has a minimum flow that was set higher than that required by Schedule 2A.* *(2) All of the water taken is immediately returned to the source water body.* *(3) All of the water being taken had been delivered to the source water body for the purpose of that subsequent take.* *(4) The consent has been surrendered or has expired (except for the quantity granted to the existing consent holder in a new consent).* *(5) The consent has been cancelled (except where the quantity has been transferred to a new consent under Section 136(5)).* *(6) The consent has lapsed.*	
6.4.2A Where an application is received to take water and Policy 6.4.2(b) applies to the catchment, to grant from within primary allocation no more water than has been taken under the existing consent in at least the preceding five years, except in the case of a registered community drinking water supply where an allowance may be made for growth that is reasonably anticipated.	The rates sought are consistent with what has been taken under the existing consents.
6.4.4 For existing takes outside Schedule 2A catchments, minimum flows, for the purpose of restricting primary allocation takes of water, will be determined after investigations have established the appropriate minimum flows in accordance with Method 15.9.1.3. The new minimum flows will be added to Schedule 2A by a plan change and subsequently will be applied to existing takes in accordance with Policy 6.4.5(d). *For new takes in a catchment outside Schedule 2A, until the minimum flow has been set by a plan change, the minimum flow conditions of any primary*	Stream flows and primary allocation minimum flows are discussed in section 5.

allocation consents will provide for the maintenance of aquatic ecosystems and the natural character of the source water body.	
6.4.7 The need to maintain a residual flow at the point of take will be considered with respect to any take of water, in order to provide for the aquatic ecosystem and natural character of the source water body.	Residual flows are considered earlier in this report and will not be beneficial.
6.4.12A To promote, approve and support water management groups to assist the Council in the management of water by the exercise of at least one of the following functions: *(a) Coordinating the take and use of water authorised by resource consent.* *(b) Rationing the take and use of water to comply with relevant regulatory requirements.* *(c) Recording and reporting information to the Council on the exercise of resource consents as required by consent conditions and other regulatory requirements, including matters requiring enforcement.*	The current users of the water essentially operate like a water management group, with more than one property being serviced by the scheme. This results in a far greater management of the potential adverse effects of surface water abstraction when compared to each landowner operating a separate take.
6.4.16 In granting resource consents to take water, or in any review of the conditions of a resource consent to take water, to require the volume and rate of take to be measured in a manner satisfactory to the Council unless it is impractical or unnecessary to do so.	The take will continue to be metered in accordance with the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010.
6.4.19 `When setting the duration of a resource consent to take and use water, to consider: *(a) The duration of the purpose of use;* *(b) The presence of a catchment minimum flow or aquifer restriction level;* *(c) Climatic variability and consequent changes in local demand for water;* *(d) The extent to which the risk of potentially significant, adverse effects arising from the activity may be adequately managed through review conditions;*	These matters are discussed in Section 8 below.

(e) Conditions that allow for adaptive management of the take and use of water; *(f) The value of the investment in infrastructure; and* *(g) Use of industry best practice.*	
6.6.0 To promote and support development of shared water infrastructure.	The Applicant already operates a water scheme with multiple users are supplied water via shared water infrastructure.

Overall, the proposal is consistent with the relevant policies of the RPW.

6.2.7 Other Documentation

Iwi planning documents are not statutory instruments, but they do have statutory weight under the RMA in relation to plan preparation process. The RPS must take into account any relevant planning document recognised by an Iwi authority, however iwi management plans retain their ability to address concepts from a Maori paradigm without constraint of the RMA.

The policies within the Kai Tahu ki Otago Natural Resource Management Plan (NRMP) that are particularly relevant to this application are set-out as follows:

- *To require that resource consents applications seek only the amount of water actually required for the purpose specified in the application.*
- *To require that all water takes are metered and reported on, and information be made available upon request to Kai Tahi ki Otago.*
- *To oppose the granting of water take consents for 35 years.*

The proposal is generally consistent with relevant policies of the NRMP, with the exception of the requested consent duration.

The policies within the Ngāi Tahu ki Murikiku Natural Resource and Environmental Iwi Management Plan (NREM a.k.a. Te Tangi a Tauira) that are particularly relevant to this application are set-out as follows:

- *Require scientifically sound, understandable, and culturally relevant information with resource consent applications;*
- *Encourage best practice and efficient use of water, particularly in terms of sustainable irrigation design, delivery and management, making best use of available water before water levels get too low and reducing the amount of water lost through evaporation by avoiding irrigating on hot windy days;*
- *Applications for water abstraction should determine where the water came from and its age;*
- *Applications should justify the quantities of water requested;*

- *Ensure that environmental flow allocation and water management regimes for rivers recognise and provide for the relationship between water quality and quantity.*
- *Encourage the installation of appropriate measuring devices (e.g. water meters) to accurately measure, report and monitor volumes of water being abstracted;*
- *Advocate for durations not exceeding 25 years on resource consents related to water abstractions;*
- *Avoid adverse effects on the base flow of any waterway, and thus on the mauri of that waterway and on mahinga kai or taonga species.*

The supporting information on which this application is based is considered to be scientifically sound and culturally relevant, and includes information on the source of the water. The water take and use is considered to be justifiable and efficient, and the take will be metered. With the exception of the requested duration of 35 years, the proposal is considered to be consistent with the policies of the NREM.

7. CONSENT DURATION, REVIEW AND LAPSE

A consent term of 35 years is sought for the replacement water permit. In accordance with Section 123 of the RMA, a term of up to 35 years may be granted for a resource consent to take and use water. This consent duration satisfies the criteria set out in Policy 6.4.19 of the RPW due to the following:

- Irrigation, stock water and domestic water use activities have been occurring in the area for more than 35 years and are highly likely to continue for at least the next 35 years.
- While no minimum flows currently exist for the Royal Burn, a residual flow is proposed to maintain macroinvertebrate habitat. A minimum flow may also be proposed for the Arrow River in the near future. The volumes sought are no more than required for the intended purpose, with the demand for water only likely to increase in response to climatic changes.
- The local climate is likely to become more variable and less predictable in the coming decades due to climate change, based on the climate change projections for the Otago region prepared by the Ministry for the Environment. In particular, temperatures (and therefore evapotranspiration) are expected to increase, and while precipitation may also increase, changes in the timing (largest increases in Winter and Spring) and form (more rain and less snow) may reduce water security in the region. More frequent droughts are predicted.
- Potential adverse effects will be managed appropriately, but should any unforeseen effects occur as a result of the exercise of the consent, the Council has the ability to review the conditions of the consent as required.
- This report and the supporting documents demonstrate that the activities will have no more than minor actual or potential adverse environmental effects. The probability that this assessment and proposed mitigation measures have not addressed all actual or potential adverse effects is low and the scope of remaining unforeseen adverse effects is limited. Review conditions can adequately manage unforeseen adverse effects if required.

- The existing water distribution infrastructure and irrigation systems represent a significant investment. Further investment will be required for ongoing maintenance of the infrastructure. The request for a 35-year consent duration gives the applicants the security to make ongoing investment decisions based on the returns from their operation over this duration.
- The existing users essentially operate as a water user group that manages the abstraction of water for different landowners, which results in a far greater management of the potential adverse effects when compared to each landowner operating a separate take. The existing scheme supports farming and residential activities that would not be able to exist otherwise.

The overall broad judgement of the RMA sets up a framework within which a consent authority must give overall regard to when deciding on an application. In doing so, there should be no other provision which would prevent the granting of resource consents for up to 35 years in this instance.

8. CONCLUSION

A decision to grant consent pursuant to Section 104C under delegated authority can be made on the basis that:

a) It is expected that the adverse effects on the environment will be minor or less;
b) The proposal meets the non-notification requirements of Section 95A of the RMA; and
c) The proposal is consistent with the requirements of the RMA, Council policy and other relevant matters.

Granting of the consents will be consistent with the purpose of the RMA for the reasons explained within this report. The proposed activities are not expected to result in further degradation of water quality and potential adverse effects will be avoided, remedied or mitigated as far as practicable.

9. SOURCES

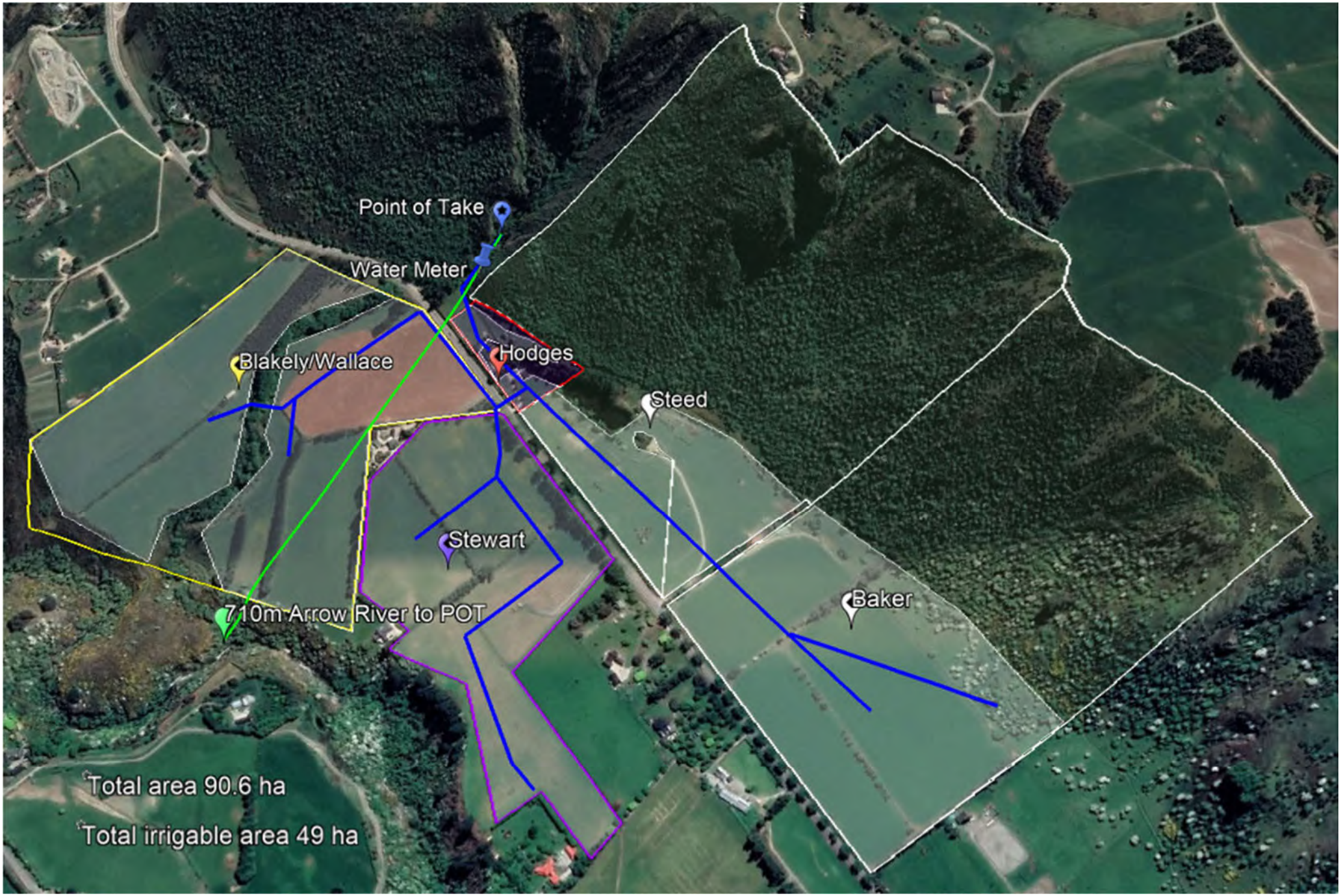
Department of Conservation, 1996, *A directory of wetlands in New Zealand,* accessed November 2019 from https://www.doc.govt.nz/globalassets/documents/science-and-technical/nzwetlands12.pdf

Landcare Research, 2019, *S-Map Online: the digital soil map for New Zealand*, accessed March 2019 from https://smap.landcareresearch.co.nz/

NZ Topo Map (2019), *NZ Topo Map*, accessed March 2019 from http://www.topomap.co.nz/

Otago Regional Council, 2017, *Update of scientific information for the Arrow catchment: 2012-2017*, accessed November 2019 from https://www.orc.govt.nz/media/4204/arrow-river-science-update-dec-2017_web.pdf

Appendix A: Scheme map


Point of Take
Water Meter
Blakely/Wallace
Hodges
Steed
Stewart
710m Arrow River to POT
Baker
Total area 90.6 ha
Total irrigable area 49 ha

Appendix B: Royal Burn Water Scheme Abstraction data

FILE NOTE

Date: 12/11/ 2019 File Ref: 19316

Subject: Royal Burn Water Scheme Abstraction data

This file note summarises available water abstraction data for the Royal Burn Water Scheme that take water under deemed permit 97402. This water is metered through water meter number WM1285.

The maximum allowable take under this deemed permit is 300,000 L/hour which is equivalent to 83 L/s.

The tables and graphs on the following pages summarise the water use data for all available records from the ORC Hilltop Data Server file "*ORC_Water meter Data – Hourly volumes and derivatives from that.dsn*" as accessed on 12th November 2019.

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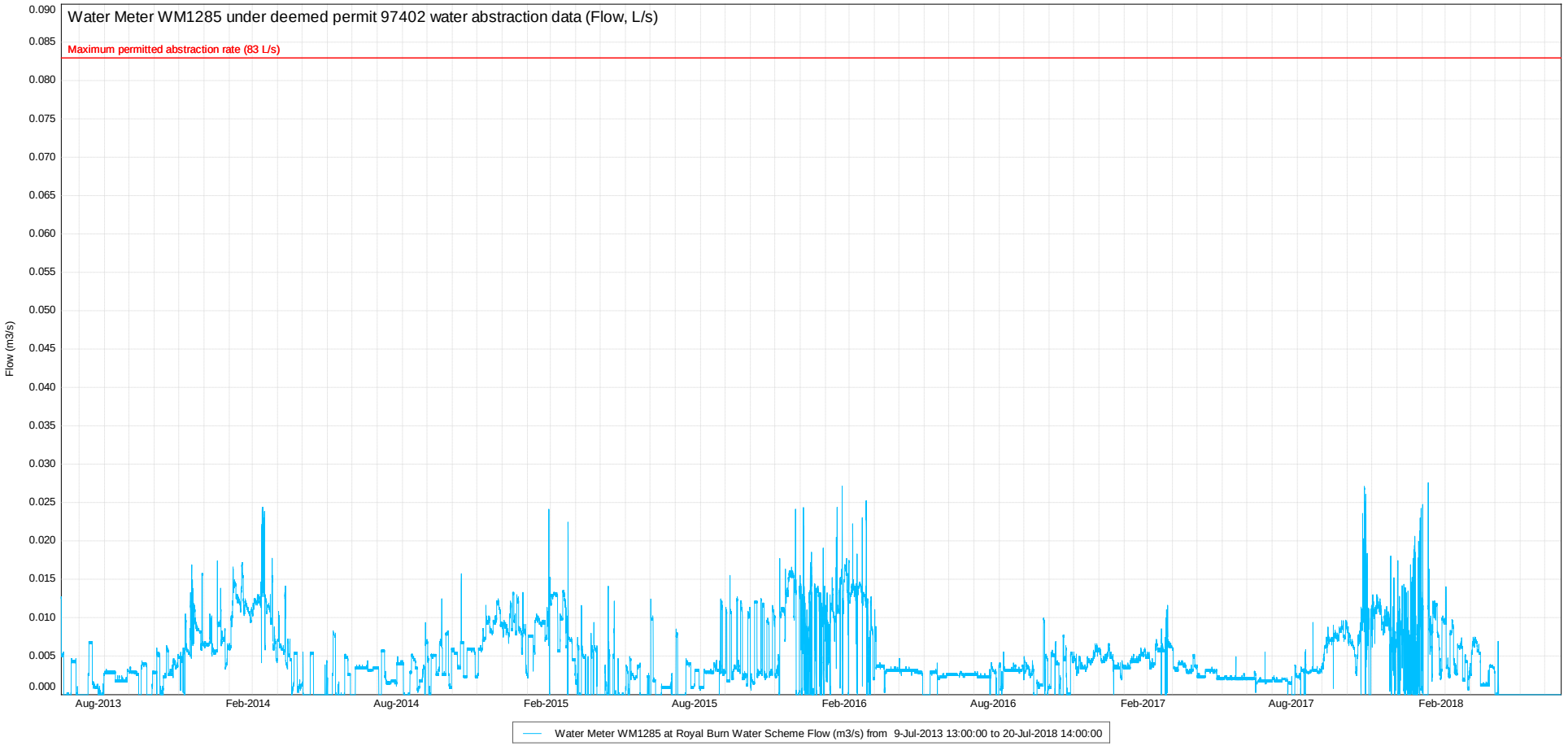
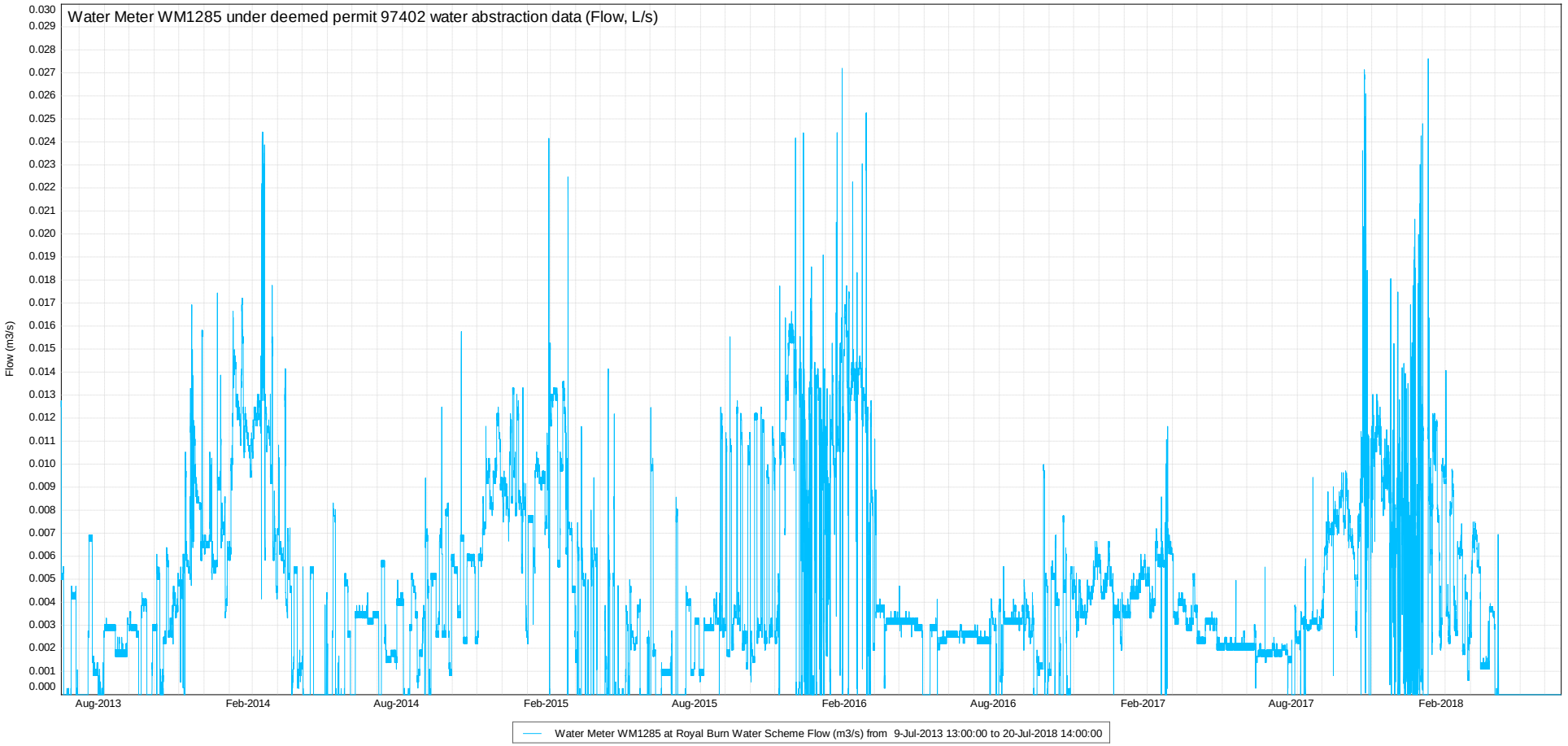
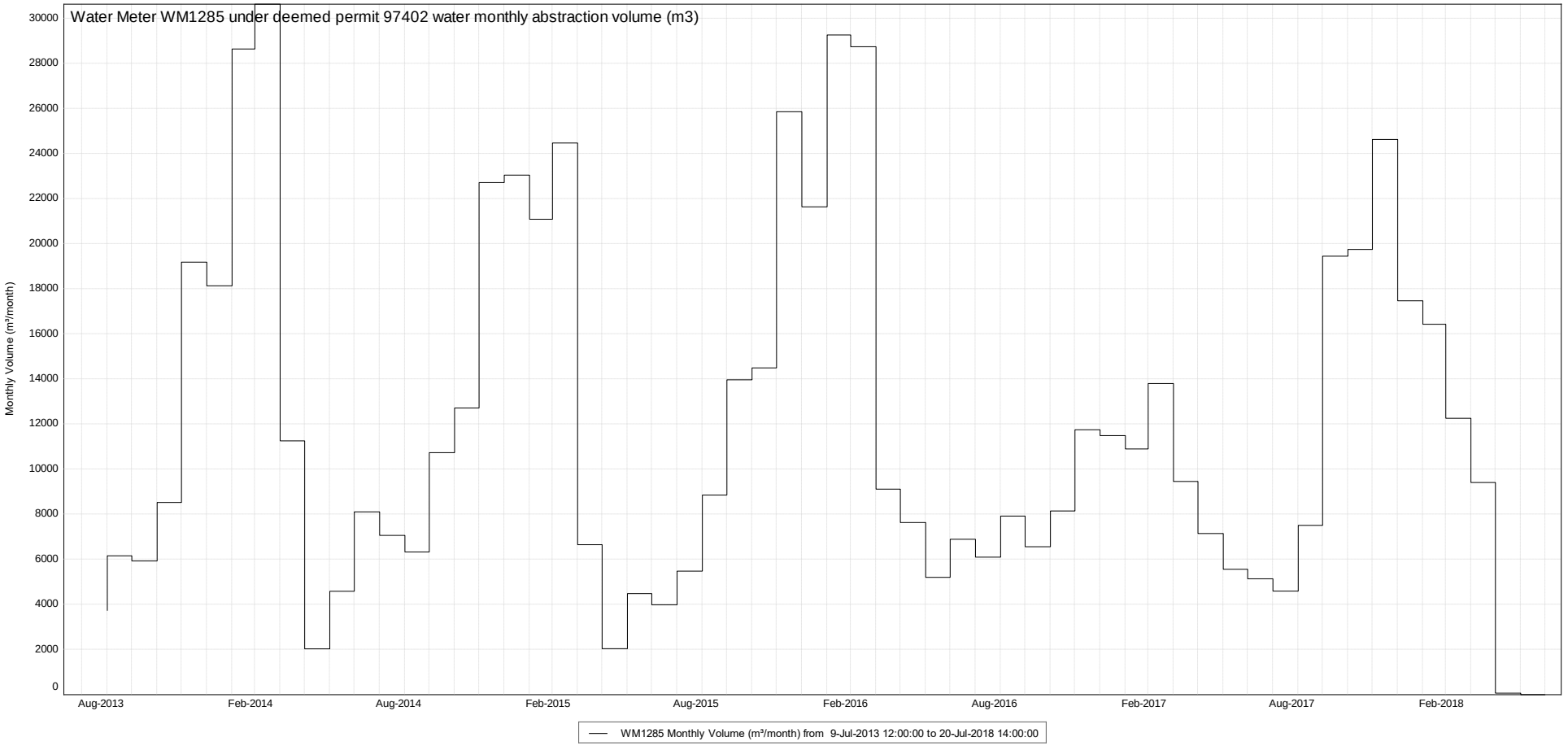
Monthly Flow Volume (m3) at Water Meter WM1285 at Royal Burn Water Scheme From 9-Jul-2013 13:00:00 to 20-Jul-2018 14:00:00														
Year	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Mean**	**Total**
2013								3,723	6,163	5,935	8,528	19,190	*8,725	*43,539
2014	18,143	28,645	30,644	11,275	2,039	4,592	8,108	7,068	6,330	10,743	12,727	22,713	13,515	163,027
2015	23,068	21,081	24,500	6,661	2,042	4,489	3,993	5,481	8,856	13,975	14,500	25,849	12,854	154,495
2016	21,652	29,272	28,760	9,127	7,646	5,205	6,898	6,102	7,927	6,574	8,147	11,757	12,383	149,067
2017	11,503	10,902	13,807	9,470	7,154	5,567	5,145	4,599	7,514	19,450	19,751	24,646	11,643	139,508
2018	17,493	16,421	12,280	9,421	70	0							*9,213	*55,685
Min.	11,503	10,902	12,280	6,661	70	0	3,993	3,723	6,163	5,935	8,147	11,757	11,643	
Mean	18,372	21,264	21,998	9,191	3,790	3,970	6,036	5,394	7,358	11,335	12,730	20,831	12,599	
Max.	23,068	29,272	30,644	11,275	7,646	5,567	8,108	7,068	8,856	19,450	19,751	25,849	13,515	

* The Min Mean and Max of Annual values are for complete years only


Water Meter WM1285 under deemed permit 97402 water abstraction data (Flow, L/s)
Maximum permitted abstraction rate (83 L/s)
Flow (m3/s)
0.090
0.085
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
Aug-2013
Feb-2014
Aug-2014
Feb-2015
Aug-2015
Feb-2016
Aug-2016
Feb-2017
Aug-2017
Feb-2018
Water Meter WM1285 at Royal Burn Water Scheme Flow (m3/s) from 9-Jul-2013 13:00:00 to 20-Jul-2018 14:00:00


Water Meter WM1285 under deemed permit 97402 water abstraction data (Flow, L/s)
Flow (m3/s)
0.030
0.029
0.028
0.027
0.026
0.025
0.024
0.023
0.022
0.021
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0.000
Aug-2013
Feb-2014
Aug-2014
Feb-2015
Aug-2015
Feb-2016
Aug-2016
Feb-2017
Aug-2017
Feb-2018
Water Meter WM1285 at Royal Burn Water Scheme Flow (m3/s) from 9-Jul-2013 13:00:00 to 20-Jul-2018 14:00:00


Water Meter WM1285 under deemed permit 97402 water monthly abstraction volume (m3)
Monthly Volume (m³/month)
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Aug-2013
Feb-2014
Aug-2014
Feb-2015
Aug-2015
Feb-2016
Aug-2016
Feb-2017
Aug-2017
Feb-2018
WM1285 Monthly Volume (m³/month) from 9-Jul-2013 12:00:00 to 20-Jul-2018 14:00:00

Appendix C: Letter from Irrigation consultant

KEN HIGGIE LTD
CENTRALWATER

Phone/Fax: 03 448 7673
Mobile: 0274 716 411
Email: ken@centralwater.co.nz

305 Dunstan Road,
P.O. Box 52,
Alexandra 9340

Thursday, January 23, 2020

Phil Blakely,
1 Jopp Street,
Arrowtown 9302

Dear Phil,

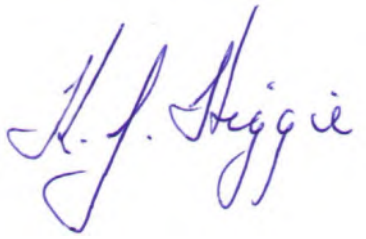
You have asked me to advise of my experience with the Royal Burn supply to your property.

I first saw water used from this supply in 1980 when I was a field rep for Southern Cross Machinery (NZ) Ltd. At that time the land was owned by Dick Farrar. He had with assistance from Southern Cross staff installed aluminium pipe suspended from willow trees from an intake above the road down to the old overhead pipe crossing the road to your present property. I supplied PVC pipe for pipeline extensions to run a Southern Cross Model 50 travelling irrigator.

I serviced this irrigator for Dick and Gordon Murphy the following landowner. I also supplied additional pipe for Gordon to extend use of this water.

In mid 1990s, I supplied your Southern Coss TCD 2000 travelling irrigator whist working for McNeill Drilling Co Ltd. I serviced the irrigator in November last year and have just replaced the damaged hose.

Regards,



Ken Higgie

Appendix D: Soil map


6 (100%)
400
600
400
Barr_39 (100%)
400
Ngap
400

Appendix E: Aqualinc irrigation requirement calculations

Site:	Example						Sub-region	Central and Lakes District						
	Land use	Soil type	Area (ha)	MAR Zone	Smaps PAW	Aqualinc PAW	peak daily demand (mm/day)	peak daily demand (m^3)	maximum monthly demand (mm/month)	maximum monthly demand (m^3)	90%ile annual demand (mm/year)	90%ile annual demand (m^3)	100%ile annual demand (mm/year)	100%ile annual demand (m^3)
Steed/Baker1	Pasture	Pigburnf, Barrhillf	17.90	650	121.29	120	4.2	751.8	130	23,270	630	112,770	714	127806.00
Blakely/Wallace	Pasture	Barrhillf, Barrhillf	18.50	650	121.39	120	4.2	777.0	130	24,050	630	116,550	714	132090.00
Stewart	Pasture	Barrhillf, Barrhillf,	11.10	650	126.6	120	4.2	466.2	130	14,430	630	69,930	714	79254.00
Hodges	Pasture	Barrhillf	0.79	650	121	120	4.2	33.2	130	1,027	630	4,977	714	5640.60
		Total	**48.3**					***2,028***		***62,777***		***304,227***		***344,791***

Appendix F: Records of Title

Attachment 7 - Baker Steed WM1285

WM Flow (L/s) at WM1285
From 2013-07-09 12:00:00 to 2019-08-01 16:00:00

Date	Rate
2013/07/09 12:00:00	12.77191
2013/07/09 13:00:00	12.5
2013/07/09 14:00:00	12.77778
2013/07/09 15:00:00	12.5
2013/07/09 16:00:00	12.74846
2013/07/09 17:00:00	5.543827
2013/07/09 18:00:00	5.005864
2013/07/09 19:00:00	5.271914
2013/07/09 20:00:00	5.005864
2013/07/09 21:00:00	5.271914
2013/07/09 22:00:00	5.005864
2013/07/09 23:00:00	5.271914
2013/07/10 00:00:00	5.005864
2013/07/10 01:00:00	5.271914
2013/07/10 02:00:00	5.005864
2013/07/10 03:00:00	5.271914
2013/07/10 04:00:00	5.005864
2013/07/10 05:00:00	5.271914
2013/07/10 06:00:00	5.005864
2013/07/10 07:00:00	5.277778
2013/07/10 08:00:00	5.271914
2013/07/10 09:00:00	5.005864
2013/07/10 10:00:00	5.271914
2013/07/10 11:00:00	5.005864
2013/07/10 12:00:00	5.277778
2013/07/10 13:00:00	5
2013/07/10 14:00:00	5.277778
2013/07/10 15:00:00	5.271914
2013/07/10 16:00:00	5.005864
2013/07/10 17:00:00	5.277778
2013/07/10 18:00:00	5.271914
2013/07/10 19:00:00	5.005864
2013/07/10 20:00:00	5.277778
2013/07/10 21:00:00	5.271914
2013/07/10 22:00:00	5.005864
2013/07/10 23:00:00	5.271914
2013/07/11 00:00:00	5.005864
2013/07/11 01:00:00	5.277778
2013/07/11 02:00:00	5.271914
2013/07/11 03:00:00	5.005864
2013/07/11 04:00:00	5.271914
2013/07/11 05:00:00	5.005864
2013/07/11 06:00:00	5.277778
2013/07/11 07:00:00	5.271914
2013/07/11 08:00:00	5.005864
2013/07/11 09:00:00	5.271914
2013/07/11 10:00:00	5.005864
2013/07/11 11:00:00	5.277778
2013/07/11 12:00:00	5
2013/07/11 13:00:00	5.277778
2013/07/11 14:00:00	5.271914
2013/07/11 15:00:00	5.005864
2013/07/11 16:00:00	5.271914
2013/07/11 17:00:00	5.005864
2013/07/11 18:00:00	5.277778
2013/07/11 19:00:00	5.277778
2013/07/11 20:00:00	5.277778
2013/07/11 21:00:00	5.555556
2013/07/11 22:00:00	5.277778
2013/07/11 23:00:00	5.555556
2013/07/12 00:00:00	5.277778
2013/07/12 01:00:00	5.555556
2013/07/12 02:00:00	5.277778
2013/07/12 03:00:00	5.549691
2013/07/12 04:00:00	5.283642
2013/07/12 05:00:00	5.277778
2013/07/12 06:00:00	5.555556
2013/07/12 07:00:00	5.277778
2013/07/12 08:00:00	5.555556
2013/07/12 09:00:00	5.277778
2013/07/12 10:00:00	5.277778
2013/07/12 11:00:00	4.137346
2013/07/12 12:00:00	0
2013/07/12 13:00:00	0
2013/07/12 14:00:00	0
2013/07/12 15:00:00	0
2013/07/12 16:00:00	0
2013/07/12 17:00:00	0
2013/07/12 18:00:00	0
2013/07/12 19:00:00	0
2013/07/12 20:00:00	0
2013/07/12 21:00:00	0
2013/07/12 22:00:00	0
2013/07/12 23:00:00	0
2013/07/13 00:00:00	0
2013/07/13 01:00:00	0
2013/07/13 02:00:00	0
2013/07/13 03:00:00	0
2013/07/13 04:00:00	0
2013/07/13 05:00:00	0
2013/07/13 06:00:00	0
2013/07/13 07:00:00	0
2013/07/13 08:00:00	0
2013/07/13 09:00:00	0
2013/07/13 10:00:00	0
2013/07/13 11:00:00	0
2013/07/13 12:00:00	0
2013/07/13 13:00:00	0
2013/07/13 14:00:00	0
2013/07/13 15:00:00	0
2013/07/13 16:00:00	0
2013/07/13 17:00:00	0
2013/07/13 18:00:00	0
2013/07/13 19:00:00	0
2013/07/13 20:00:00	0
2013/07/13 21:00:00	0
2013/07/13 22:00:00	0
2013/07/13 23:00:00	0
2013/07/14 00:00:00	0
2013/07/14 01:00:00	0
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2013/07/14 07:00:00	0
2013/07/14 08:00:00	0
2013/07/14 09:00:00	0
2013/07/14 10:00:00	0
2013/07/14 11:00:00	0
2013/07/14 12:00:00	0
2013/07/14 13:00:00	0
2013/07/14 14:00:00	0
2013/07/14 15:00:00	0
2013/07/14 16:00:00	0
2013/07/14 17:00:00	0
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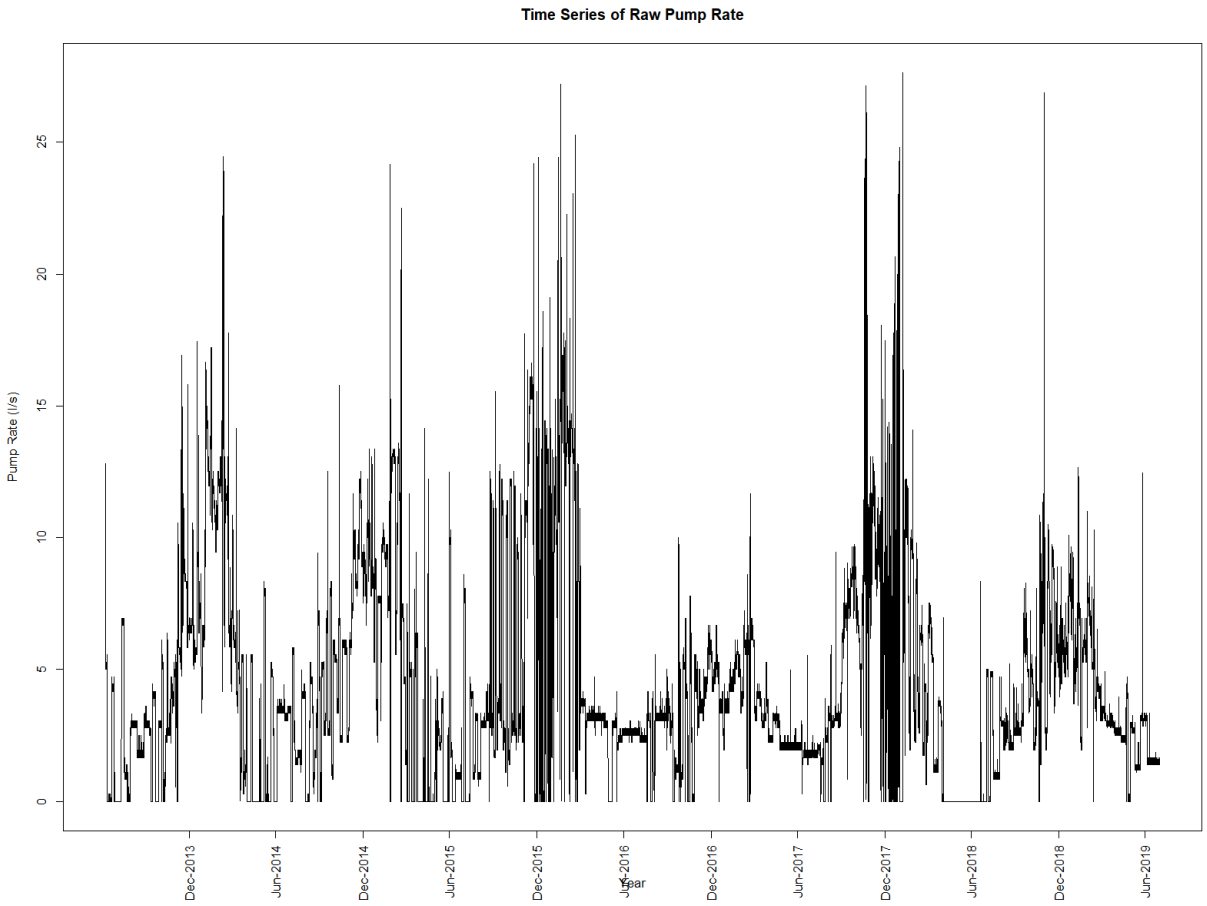
2013/07/14 21:00:00	0



WM Daily V (m^3/day) at WM1285
From 09/07/2013 to 01/08/2019

Date	Volume
09/07/2013	580.85
10/07/2013	447
11/07/2013	454.89
12/07/2013	0
13/07/2013	0
14/07/2013	0
15/07/2013	0
16/07/2013	1
17/07/2013	1
18/07/2013	1
19/07/2013	0
20/07/2013	0
21/07/2013	289.08
22/07/2013	378
23/07/2013	375
24/07/2013	366
25/07/2013	367.98
26/07/2013	370.02
27/07/2013	96.92
28/07/2013	4
29/07/2013	0
30/07/2013	0
31/07/2013	0
01/08/2013	0
02/08/2013	0
03/08/2013	0
04/08/2013	0
05/08/2013	0
06/08/2013	0
07/08/2013	0
08/08/2013	0
09/08/2013	0
10/08/2017	7.06
11/08/2013	238.06
12/08/2013	592
13/08/2013	590
14/08/2013	586
15/08/2013	588
16/08/2013	168.92
17/08/2013	105.98
18/08/2013	104
19/08/2013	91
20/08/2013	92
21/08/2013	95
22/08/2013	95
23/08/2013	6.98
24/08/2013	16
25/08/2013	24
26/08/2013	3
27/08/2013	1
28/08/2013	1
29/08/2013	2
30/08/2013	159.04
31/08/2013	243.02
01/09/2013	244
02/09/2013	247
03/09/2013	255
04/09/2013	254.98
05/09/2013	253
06/09/2013	254
07/09/2013	254.02
08/09/2013	250.98
09/09/2013	250
10/09/2013	251.02
11/09/2013	252.98
12/09/2013	251.02
13/09/2013	182.96
14/09/2013	149.02
15/09/2013	151
16/09/2013	163.98
17/09/2013	149.02
18/09/2013	167.98
19/09/2013	152.02
20/09/2013	153
21/09/2013	154
22/09/2013	158
23/09/2013	156
24/09/2013	151.98
25/09/2013	150.02
26/09/2013	161.98
27/09/2013	162.02
28/09/2013	266.02
29/09/2013	263
30/09/2013	262
01/10/2013	284
02/10/2013	269
03/10/2013	259
04/10/2013	260
05/10/2013	260
06/10/2013	258.98
07/10/2013	254.02
08/10/2013	253
09/10/2013	235.98
10/10/2013	223
11/10/2013	197.96
12/10/2013	0
13/10/2013	0
14/10/2013	17.06
15/10/2013	311.02
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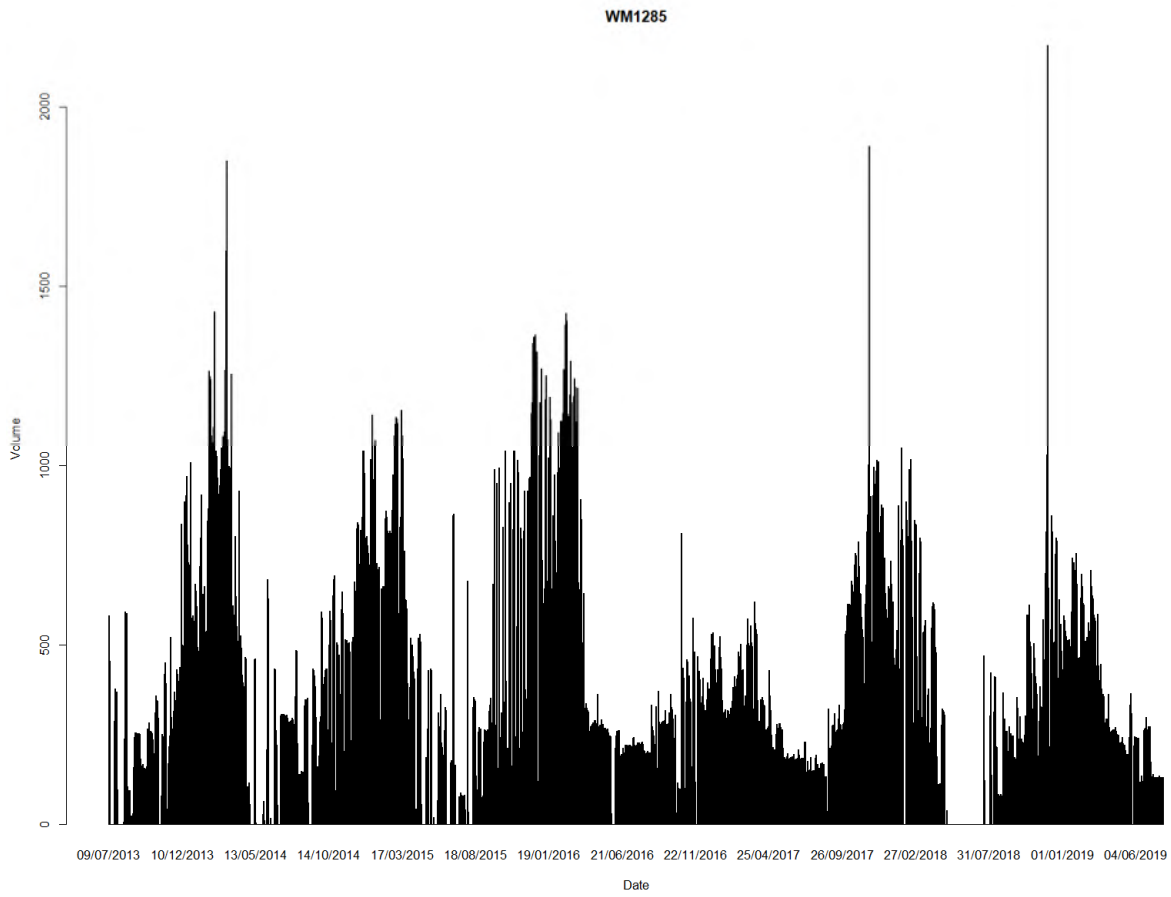

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09/10/2012 29.27
10/10/2012 27
11/10/2012 26.73
12/10/2012 27.27
13/10/2012 11
14/10/2012 49.73
15/10/2013 03.27
16/10/2012 78.73
17/10/2012 70.27
18/10/2013 44.94
19/10/2015 84
20/10/2015 84
21/10/2015 13.27
22/10/2015 48.73
23/10/2015 07.27
24/10/2016 11.73
25/10/2015 08.27
26/10/2014 95
27/10/2014 35
28/10/2014 20
29/10/2014 19.27
30/10/2013 22
31/10/2013 16.27
01/11/2013 18
02/11/2015 04.2
03/11/2014 64.27
04/11/2014 16.27
05/11/2014 12
06/11/2013 91
07/11/2013 93
08/11/2013 64
09/11/2012 40.8
10/11/2011 80.73
11/11/2011 88.27
12/11/2011 91.73
13/11/2012 88
14/11/2012 60
15/11/2013 84.73
16/11/2013 26
17/11/2013 28
18/11/2013 25.73
19/11/2013 21
20/11/2011 93.06
21/11/2010
22/11/2015 70.34
23/11/2011 92.12
24/11/2011 32.27
25/11/2014 59.2
26/11/2014 27
27/11/2016 98.67
28/11/2018 16
29/11/2017 24.53
30/11/2011 029.75
01/12/2012 170.72
02/12/2016 59.33
03/12/2012 50.53
04/12/2012 07
05/12/2011 73
06/12/2012 18

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08/12/201 543.67
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10/12/201 860
11/12/201 815.06
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15/12/201 498.27
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17/12/201 509
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21/12/201 739.8
22/12/201 407.53
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14/02/201 611.27
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21/03/201 401
22/03/201 446.73
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29/03/201 357.27
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21/05/201 193.73
22/05/201 243.27
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26/06/201 298
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02/07/201 265
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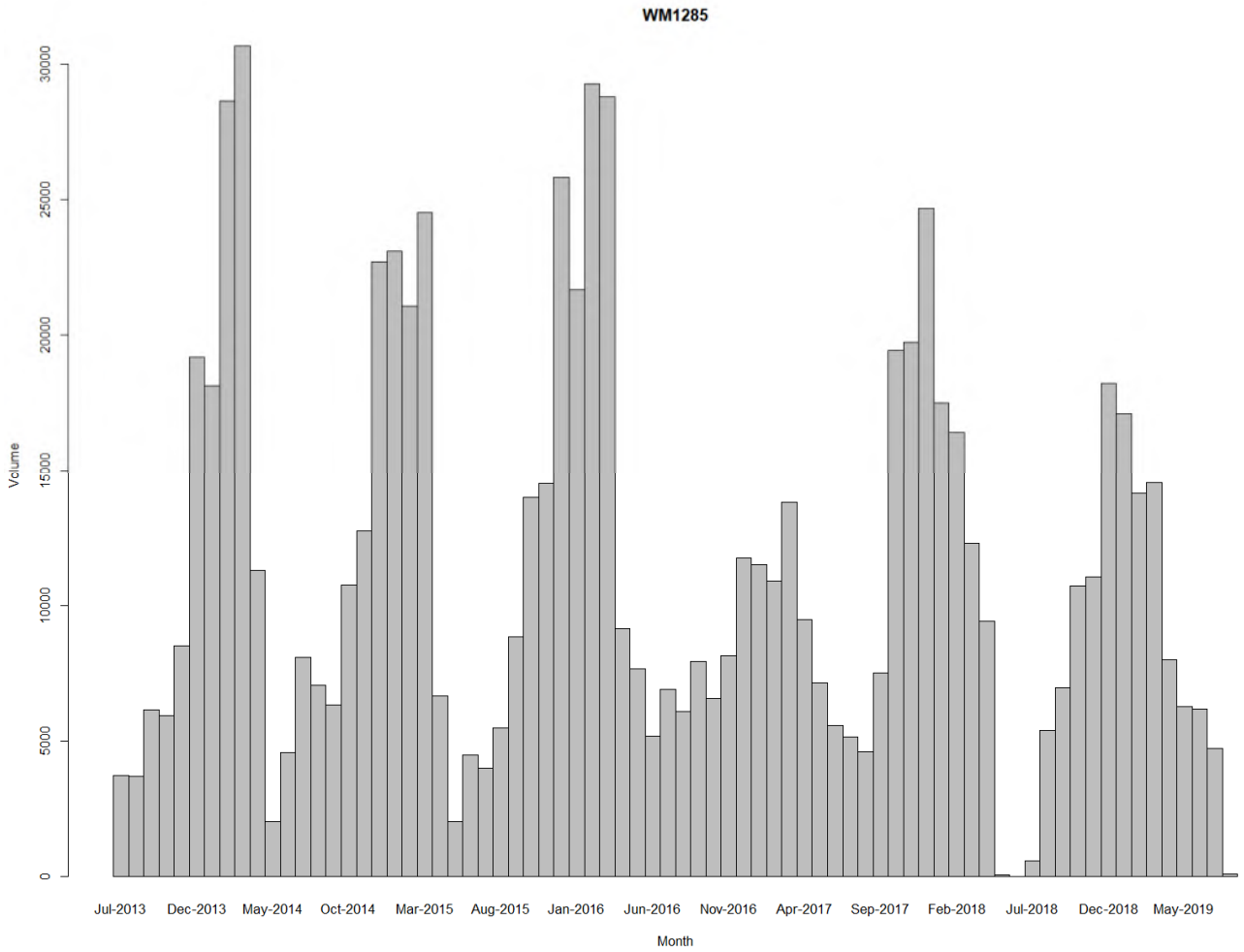
22/07/201 131
23/07/201 135
24/07/201 131.73
25/07/201 132
26/07/201 131
27/07/201 131.27
28/07/201 131
29/07/201 129.73
30/07/201 129.27
31/07/201 131.73
01/08/201 28

WM Monthly V (m^3/month) at WM1285
From Jul-2013 to Aug-2019

Date	Volume
Jul-2013	3732.75
Aug-2013	3717.06
Sep-2013	6163
Oct-2013	5935.98
Nov-2013	8524.04
Dec-2013	19187.04
Jan-2014	18143
Feb-2014	28637.06
Mar-2014	30649.94
Apr-2014	11284.89
May-2014	2041.98
Jun-2014	4592
Jul-2014	8102.06
Aug-2014	7066.02
Sep-2014	6325.04
Oct-2014	10744.98
Nov-2014	12733.94
Dec-2014	22701.13
Jan-2015	23079.87
Feb-2015	21064.19
Mar-2015	24518.79
Apr-2015	6663.98
May-2015	2040
Jun-2015	4490
Jul-2015	3993
Aug-2015	5479
Sep-2015	8852.04
Oct-2015	13977.98
Nov-2015	14497.02
Dec-2015	25828.21
Jan-2016	21658.94
Feb-2016	29269.04
Mar-2016	28766.94
Apr-2016	9133.92
May-2016	7653.92
Jun-2016	5200.04
Jul-2016	6898
Aug-2016	6099.04
Sep-2016	7925.02
Oct-2016	6580.92
Nov-2016	8139.08
Dec-2016	11755
Jan-2017	11506.96
Feb-2017	10900.02
Mar-2017	13804.02
Apr-2017	9476.96
May-2017	7154.98
Jun-2017	5567
Jul-2017	5145
Aug-2017	4597.43
Sep-2017	7511.73
Oct-2017	19440.94
Nov-2017	19744.94
Dec-2017	24654.33
Jan-2018	17505.59
Feb-2018	16403.88
Mar-2018	12292.33
Apr-2018	9425.8
May-2018	70
Jun-2018	0
Jul-2018	594
Aug-2018	5398.2
Sep-2018	6965
Oct-2018	10710
Nov-2018	11059.67
Dec-2018	18211.8
Jan-2019	17099.47
Feb-2019	14128.53
Mar-2019	14547.53
Apr-2019	7999.27
May-2019	6288.73
Jun-2019	6174
Jul-2019	4728.27
Aug-2019	94



WM Annual V (m^3/year) at WM1285
From 2013/2014 to 2019/2020

Date	Volume
2013/2014	142,609
2014/2015	149,530
2015/2016	174,310
2016/2017	105,807
2017/2018	136,792
2018/2019	119,176
2019/2020	4,822