

BEFORE THE COMMISSIONER ON BEHALF OF OTAGO REGIONAL COUNCIL

IN THE MATTER OF

the Resource Management Act
1991

AND

IN THE MATTER OF

Resource Consent Applications
RM20.079.01 - 03

Bendigo Station Limited

STATEMENT OF REPLY OF CHARLES HORRELL

FOR OTAGO REGIONAL COUNCIL

14 May 2021

1. My full name is Charles Price Horrell. My qualifications and experience are set out in my s42a report. The purpose of this statement is to respond to matters by the Applicant and the Submitter (Aukaha) through their briefs of evidence, and supplementary evidence. I respond only to matters that I consider are either contrary to my current recommendation, or that the Panel may require further clarification on.

Applicants Evidence

2. I have received and read the evidence provided on behalf of the Applicant. Included in the evidence is:
 - a. Brief of Evidence of Grant Porter acting on behalf of the Applicant;
 - b. Brief of Evidence of William Nicolson, Landpro (planning);
 - c. Brief of Evidence of Christina Bright, Landpro (Hydrology);
 - d. Brief of Evidence of Richard Allibone, Waterways Consulting (Ecology);
 - e. Submissions of Counsel, Galloway Cook Allan; and
 - f. Supplementary Evidence of William Nicolson, Landpro.
3. Based on my review of the evidence provided, the evidence largely supports the position reached in the s42A report with the exception of specific matters. There are three matters I identify that differ from my current recommendation that I wish to make comment on to assist the commissioner in their decision. These matters are:
 - a. Overflow channel
 - b. Modelled 7dMALF and Mean Flow
 - c. Supplementary minimum flow
4. I also note that further clarification to questions raised in my s42A report are provided by Mr Nicolson in his evidence¹. I confirm that this clarifies the matters I raised and I do not wish to comment further.
5. I have further considered each of the matters outlined in paragraph 3 below.

Overflow channel

6. In my s42A report, I identified that the overflow from the Bendigo Station Pond into the Bendigo River may be an inefficient use of water. I have recommended that this discharge is ceased within two years of the commencement of the consent to provide time for investigate and implement measures. This recommendation was made on the basis that at the time of preparing my s42A report, I did not consider there was sufficient evidence to suggest that the operation of the overflow channel is necessary and would result in an inefficient use of water.
7. As noted in my response to Minute 2, while this may be associated with the discharge which is permitted, I consider that this is an intra vires condition as it relates to the use of water.

¹ Paragraphs 18 - 19

8. Through the evidence of Mr Porter, further detail has been provided regarding the operation of the overflow and its necessity. Mr Porter identifies that the overflow has specific function in providing the for following:
 - a. Reasonable stock drinking water between the Bendigo Creek pond and the Bendigo Creek River; and
 - b. The operation of the spillway during high flow situations.
9. In relation to the stock drinking water, Mr Porter notes that the overflow provides valuable drinking water for stock that graze the paddocks that the channel traverses as well as a small extent of Bendigo Creek which the flows contribute to. The requirement for this stockwater via the overflow is noted to be periodic and only up to 8 weeks per year².
10. Mr Porter provides details of an example using the overflow for stock water in April 2021 where it is identified that the operation of the overflow enables reappearance of surface water flows downstream of the outfall and contributes to Bendigo Creek hydrologically. This is further supported in the Evidence of Ms Bright who indicates that this water does provide a modest hydrological benefit in localised extending of the wetted bed.
11. In relation to the operation of the spillway during high flows, Mr Porter notes that this provides a dam safety function in managing increased inflows into the dam, mainly through rainfall and localised overland flow.
12. I accept that the overflow provides for the need of stock drinking water and in that regard, has an important function. I note that there would be more efficient methods of providing drinking water; however, I acknowledge that this would come at a high financial cost and the actual effects on instream values remains minor. I acknowledge that the overflow for the purpose of stockwater only occurs only periodically and its frequency is reduced over during the driest times³ where potential impacts on low flows would be greatest.
13. While not substantiated with technical comment, I accept that the overflow does serve an important function in ensuring the safe operation of the dam and minimises potential for an uncontrolled release of water.
14. Based on the above, I am of the opinion that there is sufficient evidence that the overflow is necessary, in particular in providing for stock drinking water.

² Paragraph 5.5 of the Brief of Evidence of Grant Porter

³ Paragraph 5.5 of the Brief of Evidence of Grant Porter indicates that the overflow is reduced to once per month [presumably one day] between January to April inclusive

15. While I consider there is risk for an inefficient use of water through frequent overflows through over-abstraction, I do not consider that it is justified to cease the overflow on that basis. Further, alternative conditions to 'minimise' overflows, such as those suggested by Mr Nicolson⁴, would be too subjective as a consent condition.

16. I therefore recommend deletion of Condition 4 of RM20.079.01. This has been indicated on an amended consent appended to this statement of reply.

Alternative 7dMALF and Natural Mean Flow

17. Ms Bright has provided in her evidence an updated assessment of the hydrology of Bendigo Creek. This assessment has been based on additional gaugings and providing a regression assessment against a similar catchment. Through this, Ms Bright has suggested that the 7dMALF is 19.9 L/s and the natural mean flow is 86.3 L/s⁵.

18. This differs from the current identified 7dMALF and natural mean flow as calculated by RainEffects being 33 L/s and 120 L/s respectively.

19. David Stewart of RainEffects has reviewed Ms Bright's evidence and has provided comment in a memo attached as **Appendix 1**. Mr Stewart acknowledges that the new numbers are based on additional data, however, identifies the following concerns:

- a. The correlation coefficient is 0.75 which is a poor correlation;
- b. Gaugings are likely to have encountered flooding which could influence the rating curve;
- c. The highest gauged flow (in Bendigo Creek) is 49 l/s while the suggested mean flow is 86 l/s. There is no check on flows near or above the suggested mean flow and therefore the rating for flows above about 60 l/s is questionable; and
- d. The 7dMALF is the average of the lowest 7-day average flow in each year, preferably with a minimum number of 5 years to get a better indication of what the value would be over a longer period of record.

20. Based on the above concerns, Mr Stewart has recommended that a conservative approach should be taken and his original 7dMALF⁶ and natural mean flow figures be relied upon.

21. I agree with Mr Stewart and consider that the current identified 7dMALF and natural mean flow of Bendigo Creek being 33 L/s and 120 L/s respectively be relied upon. I do acknowledge that the Commissioner may be of the opinion that the alternative figures

⁴ Suggested alternative wording: "The Consent Holder must minimise discharges from the reservoir via the spillway wherever practicable" OR "The Consent Holder shall avoid unutilised discharges from the reservoir via the spillway wherever practicable." - provided via a comment on Condition 4 of RM20.079.01 of Appendix B of the Evidence

⁵ Paragraph 3.12

⁶ Albeit Ms Bright's suggested 7dMALF is lower than the current recommended 7dMALF

provided by Ms Bright are appropriate given this is based the additional data that it relies on.

22. Regardless of the above, I note that the difference in the 7dMALF will not make a material difference for this application, with the exception of if a residual flow was to be based on a percentage of 7dMALF (which is no longer sought by any party). This is on the basis that primary allocation would remain 50 L/s in accordance with Policy 6.4.2(b) and other assessments (e.g. ecology) have not relied upon the modelled 7dMALF.
23. As with the 7dMALF, I do not consider that the discrepancy is likely to have a material difference to this application, with the exception of if the natural mean flow was to be relied upon in setting a minimum flow (see discussion below). In the case that the natural mean flow was to be used as a minimum flow for supplementary allocation, I would consider that the conservative figure (120L/s) provided by Mr Stewart would be appropriate.

Supplementary Minimum Flow

24. In both the primary and supplementary evidence of Mr Nicolson, he has suggested in an alternative condition to the current minimum flow conditions as proposed, which would result in the deletion of Condition 3 and the following amendments to Condition 5 of RM20.079.01 (additions italicised, deletions struck through):

This consent must not be exercised when flows in Bendigo Creek at NZTM 2000: E1314218 N5018598 are below ~~150 L/s~~ *50% of the natural flow.*⁷

OR

~~This consent must not be exercised when flows in Bendigo Creek at NZTM 2000: E1314218 N5018598 are below 150 L/s. The minimum flow for exercising supplementary allocation under this Consent is calculated as follows: (((flow @ E1314483 N5018116) + (primary abstraction @ E1314218 N5108598)) x 0.5) + 50.~~⁸

25. Mr Nicolson notes that this condition meets the requirements of Policy 6.4.9(a) and would ensure that at all times there is a flow that is 50% of the natural flows at all times.
26. On the face of the proposed conditions, I agree with Mr Nicolson that either would meet the intent of Policy 6.4.9(a) of the RPW. However, I consider that these conditions provide too much uncertainty and cannot be effectively enforced.

⁷ Paragraph 80 (ii) of primary evidence

⁸ Paragraph 13 of supplementary evidence

27. This condition is not practical from a compliance perspective given the minimum flow would be moving and would have to be identified at any one time. Compliance with the condition would also be particularly reactive. For example, a compliance officer would only be able to consider if the condition has been met following an annual audit.
28. Method 15.8.1A.1 has relied upon on the basis that an appropriate minimum flow had not been proposed.
29. I do acknowledge that the method anticipates a number of water users in a catchment⁹, and therefore may not be as appropriate in circumstances where only one user exists (and is likely to exist in the future). The minimum flows as indicated in my response to Minute 2 are conservative, evident by being greater than the natural mean flow of Bendigo Creek, and therefore are unlikely to provide the Applicant with sufficient security.
30. However, I remain of the opinion that the conditions proposed by Mr Nicolson are too uncertain and unenforceable and therefore I do not support them. Alternatively, I would expect specific minimum flow restrictions to be set within the condition to ensure a certain outcome. I note, these restrictions could differ from the blocks as indicated in Method 15.8.1A.2 which would provide additional flexibility for the applicant to abstract, while ensuring that Policy 6.4.9(a) is met. An example of this would be to alter the blocks to 20 L/s blocks (could be alternative increments) while still using the same basic method as outlined by Method 15.8.1A.2 which would result in the following replacement of Condition 3 and amendments to Condition 5 of RM20.079.02:

3. *The rate of abstraction as supplementary allocation must not exceed:*

Rate of abstraction	When flows in Bendigo Creek at NZTM 2000 E1314218 N5018598 are above:
20 L/s	70 L/s
40 L/s	90 L/s
60 L/s	110 L/s
80 L/s	130 L/s
100 L/s	150 L/s
110 L/s	160 L/s

5. This consent must not be exercised when flows in Bendigo Creek at NZTM 2000: E1314218 N5018598 are below ~~15~~70 L/s.

31. Further to this option, as indicated in my response to Minute 2, Rule 12.1.4.7(iii)(b) and Policy 6.4.10 of the RPW enables for 'further' supplementary to be taken where the minimum flow is equal to the natural mean flow. The Applicant could seek this

⁹ See commentary of Policy 6.4.9 of the RPW

flow as an alternative to a minimum flow as set by Method 15.8.1A.2. As this change would not affect the application status, which remains under Rule 12.1.4.7, and this is provided for by Policy 6.4.10, I consider this change is within the scope of the application and does not prejudice any party.

32. Depending on the Commissioner's position on the natural mean flow as discussed above, I recommend that if this option is accepted, Condition 3 is deleted and Condition 5 is amended to as follows:
 5. This consent must not be exercised when flows in Bendigo Creek at NZTM 2000: E1314218 N5018598 are below 1520 L/s.
33. In addition to the alternative option provided by Mr Nicolson as outlined above, I have presented two other options as indicated above for applying a minimum flow for supplementary allocation under RM20.079.02. To assist the Commissioner, I have presented each option and their respective pros and cons the table attached as **Appendix 2**.
34. Based on my assessment of the options outlined in **Appendix 2**, I consider that preferred option to be the "Method 15.8.1A.1 alternative" option. I consider that this meets the requirements of Policy 6.4.9(a) while recognising that the proposed take is the only supplementary user in the catchment. I acknowledge that the Applicant has not specifically proposed this, nor has the submitter had an opportunity to consider this; however, given this achieves the same outcome, is aligned with the policy and is largely aligns with the Applicant's proposed option, I do not consider that these parties will be prejudiced by selecting this option.

Submitter's evidence

35. I have reviewed the evidence of Mr Timothy Vial on behalf of Aukaha and the Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou and Hokonui Rūnanga. Based on Mr Vial's evidence, I understand that Mr Vial's position generally aligns with my own. This is on the basis that the condition limiting change to the intake structure will provide for a flow that will support Te Mana o Te Wai.
36. Mr Vial agrees with the approach taken for managing the residual flow¹⁰; however, does not support providing for unspecified modification to the intake which does not provide certainty that the current flow will be maintained.
37. While I understand Mr Vial's concern, I do consider it prudent that such a provision given the duration recommended is 15 years and it is reasonable to expect that modifications may be required in this time. I consider that proposed Condition 5(b) does provide certainty of outcome through requiring the same residual flow as what current exists to be maintained.

¹⁰ Paragraph 10

38. To ensure that Aukaha is aware of any potential modifications to the intake, I recommend that the condition is slightly amended to require notice to also be provided to Aukaha. If there is found to be any unforeseen adverse effects as a result of a modification to the intake, I consider that the current review clause will provide the Council with the ability to alter conditions accordingly to manage the effects.
39. Mr Vial has also considered the supplementary allocation minimum flow. He agrees with the calculation as indicated in my response to Minute 2 and has suggested amendments to Condition 3 and 5¹¹. These changes largely reflect the alterations I made in the response to Minute 2. I note that clause (c) sets a minimum flow of 300 L/s when combined with RM20.079.01. I understand this to be the addition of the primary rate of take (50 L/s).
40. While the Applicant will need to account for the primary allocation rate when abstracting water (e.g. if both are to be abstracted together the addition of the primary take will need to be accounted for to ensure compliance with the minimum flow), this does not factor into the minimum flow restriction. Notwithstanding my discussion regarding the supplementary minimum flow in paragraphs 24 to 34, I consider that the minimum flow specified in clause (c) should be 250 L/s as recommended.

Concluding comments

41. Overall, I remain of the opinion that the consent application be granted subject to appropriate conditions which are attached to this response (**Appendix 3**). I note that the changes outlined are a modification to the set provided in response to Minute 2.



Charles Horrell
Consultant Planner

¹¹ Paragraph 78

Appendix 1: Memo from RainEffects

Purpose and Background

This memorandum has been prepared to respond to matters raised in the Statement of Evidence of Christina Bright dated 3 May 2021. Specifically, I respond to the alternative 7 day Mean Annual Low Flow (7dMALF) and Natural Mean Flow provided by Ms Bright.

By way of context, I prepared a report dated 5 February 2021 for Otago Regional Council that provided advice on the 7dMALF and mean flow for Bendigo Creek. I identified that the Bendigo Creek has a 7dMALF of 33 L/s and a natural mean flow of 120 L/s. Ms Bright through her evidence has indicated an alternative 7dMALF of 19.9 L/s and an alternative natural mean flow of 120 L/s.

Given that Ms Bright used a very different dataset to the one I had available, it was always likely that the results she derived from her much longer dataset would be different to mine and she acknowledges that in her evidence.

Discussion

Flow data collectors like the Regional Councils and NIWA operate their water level and flow recorders under strict controls and guidelines to ensure that the quality of the collected data will be the best possible. There is a requirement that the flow site be gauged (usually monthly) to ensure that the rating curve (a graph that relates water level measured at the site to the corresponding flow measured at that site) is maintained and updated when necessary. These rating curves can change often in riverbeds which comprise much loose material like sands and gravels. A flood will often affect/change the rating curve and a new one then needs to be developed.

Flow recordings in Bendigo Creek began on 13 February 2020 and at the time of the current Hearing, data was available up to 27 April 2021. That equates to 14 months of record with only 5 gaugings in that period. As a result, only the low flow part of the rating has been defined because the highest gauging is only 49 l/s but its quality is questionable because of the few gaugings undertaken to date. In addition, considerable flooding occurred in Central Otago in January and it is likely that that Bendigo Creek also flooded. This flooding could have changed the rating curve through riverbed movement that normally occurs in rivers during floods. After such events, several gaugings are usually required to confirm or redrawn the rating curve. Only one gauging has been undertaken to date.

Ratings need to provide a good water level/flow relationship over the full range of flows if possible. Gauging of flows in excess of mean flow help with this. In the case of Bendigo Creek, the highest gauged flow is 49 l/s while the suggested mean flow is 86 l/s. There is no check on flows near or above the suggested mean flow and therefore the rating for flows above about 60 l/s is questionable.

The calculated 7dMALF is the average of the lowest 7-day average flow in each year, preferably with a minimum number of 5 years to get a better indication of what the value would be over a longer period of record.

The calculated mean flow is the average of all flows in the record and if higher flows are not accurate, they can have a significant impact on the calculated mean flow.

Using this unconfirmed record, a correlation with Lauder Creek is used to determine the mean flow for Bendigo Creek at the measuring site. The correlation coefficient (R^2 Value) was 0.75 which I would consider a poor correlation, and which may be due in part, to the

lesser quality Bendigo Creek data compared with the much higher quality Lauder Creek data.

From the correlation, Ms Bright calculated a mean flow and a 7dMALF from only 4 years of derived flows when in fact it is possible to extract 5 annual mean flows and 7 irrigation season low flows from the available data.

Conclusion

Until the rating is improved, and more data is collected, I would recommend a conservative approach to the mean flow and 7dMALF be taken and adopt 120 l/s and 33 l/s respectively until such times as the flow records for Bendigo Creek can be used with confidence over the full range of flows.

D W Stewart

Raineffects Limited

12 May 2021

Appendix 2: Options for supplementary allocation

Option	Minimum flow	Pros	Cons
Applicant's proposed option(s)	Condition does not specify quantifiable flow and rather the Applicant's suggested condition(s) as outlined in paragraph 24.	<ul style="list-style-type: none"> • Meets the intent of Policy 6.4.9(a). • Provides flexibility to the applicant. 	<ul style="list-style-type: none"> • Uncertain. • Compliance enforcement issues.
Method 15.8.1A.1 option	Minimum flow conditions as recommended in the response to Minute 2.	<ul style="list-style-type: none"> • Meets intent of Policy 6.4.9(a) • Consistent with the method for calculating minimum flows. • Provides certain and enforceable outcomes. • Provides for conservative minimum flows. • Method is also supported by Aukaha. 	<ul style="list-style-type: none"> • Does not recognise single user • Sets high and potentially unachievable minimum flows
Method 15.8.1A.1 alternative option	Minimum flow condition as recommended through Paragraph 30.	<ul style="list-style-type: none"> • Meets intent of Policy 6.4.9(a) • Provides certain and enforceable outcomes. • Recognises the single user in the catchment and provides more flexible minimum flows. 	<ul style="list-style-type: none"> • Sets a number of minimum flows which requires Applicant to be cognisant when abstracting water. • Has not been proposed by the Applicant.

Mean flow option	Minimum flow is equal to the natural mean flow.	<ul style="list-style-type: none"> • Is provided for by Policy 6.4.10 • Provides certain and enforceable outcomes. • Sets one minimum flow restriction. • Provides for a conservative minimum flow, while being more enabling than the “Method 15.8.1A.1 option”. 	<ul style="list-style-type: none"> • Has not been proposed by the applicant. • There remains uncertainty over what the mean flow for Bendigo Creek is.
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Appendix 3: Amended Recommended Consent Conditions

Our Reference: A1400994

Consent No. RM20.079.01

WATER PERMIT

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

Name: Bendigo Station Limited

Address: 1460 Tarras-Cromwell, RD 3, Cromwell

To take and use surface water as a primary allocation from Bendigo Creek for the and to retake and use water from the Bendigo Station Pond for the purposes of irrigation, stock water supply ~~and~~ domestic supply *and operating the Bendigo Station Pond*

For a term expiring 15 years from commencement of this consent

Locations of Points of
Abstraction:

Bendigo Creek: approximately 5.7 kilometres south east of the intersection of Bendigo Loop Road and Tarras-Cromwell Road (State Highway 7).

Bendigo Station Pond: Approximately 4 kilometres south east of the intersection of Bendigo Loop Road and Tarras-Cromwell Road (State Highway 7).

Legal Description of land at point of abstraction:

Bendigo Creek: Section 21 SO 24641

Bendigo Station Pond: Lot 8 DP 517385

Legal Description of land s where water is to be used: Lot 6 DP 525495, Lot 5 DP 517285, Lot 3 DP 391334, Lot 4 DP 391334, Part Lot 10 DP 391334, Lot 8 DP 517385, Lot 3 DP 459561, Lot 7 DP 517385, Lot 3 DP 525495, Lot 4 DP 525495, Lot 1 DP 525495, Lot 2 DP 525495 and Lot 6 DP 517385

Map Reference at point of abstraction:

Bendigo Creek: NZTM 2000: E1314483 N5018116

Bendigo Station Pond: NZTM 2000: E1313447 N5019532

Conditions

Specific

1. a) The take and use of surface water from Bendigo Creek and to retake primary allocation water from a reservoir for the irrigation of 100 hectares of pasture, stock water supply and domestic supply at the map

references and land legally described above must be carried out in accordance with the plans and all information submitted with the application, detailed below and all referenced by the Consent Authority as consent number RM20.079:

- i. The application and supporting information received by the Consent Authority on 10 March 2020 and addendums to application made on 22 May 2020 and 8 October 2020;
 - ii. Further information response received on 14 May 2020; and
 - iii. Hearing evidence 4 May 2021.
- b) If there are any inconsistencies between any conditions of this consent and the application, the conditions of consent must prevail.
2. This permit must not be exercised until Deemed Permits WR1233CR and WR3908CR have been surrendered or expired.
3. a) The rate of abstraction as primary allocation must not exceed 50 litres per second.
- b) The volume of abstraction under this permit must not exceed:
- i. 132,000 cubic metres per month; and
 - ii. 857,778 cubic metres in each 12-month period, commencing 1 July of any year and ending 30 June of the following year.
4. ~~This consent only authorises water to be by-washed via the reservoir spillway into Bendigo Creek as shown in **Appendix 1** of this permit until [2 years after commencement date]. The Consent Holder must provide written notice within 20 working days of 23 November 2022 to the Consent Authority that the by-wash has ceased and details of how water is retained within the reservoir.~~
- 5.4 (a) The method for taking water at NZTM 2000 E1314483 N5018116 must be via an open pipe positioned above the bed of Bendigo Creek as described in the Application and Assessment of Environmental Effects received by the Consent Authority on 10 May 2020 and as shown in **Appendix 2**, unless clause (b) applies.
- (b) The method for taking water at NZTM 2000 E1314483 N5018116 may be modified, provided the following is adhered to:
- (i) A continuous connected residual flow is maintained at all times immediately downstream of the point of take for a distance of no less than 750 metres;
 - (ii) The Consent Authority *and Aukaha on behalf of Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou and Hokonui Rūnanga* is notified of the change in method of taking no less than 15 working days before any changes to the intake are undertaken; and
 - (iii) The Consent Holder must notify the Consent Authority in writing of the completion of the intake establishment no less than 10 working days following completion of works as outlined in (ii), and must provide photographs of the new method of intake. Photographs must be in colour and be no smaller than 200 x 150 millimetres in size and be in JPEG form.

Performance Monitoring

65. a) ~~Prior to the first exercise of this consent, the~~ The Consent Holder must ~~install~~ maintain:
- i. A water meter that will measure the rate and the volume of water taken to within an accuracy of +/- 5% over the meter's nominal flow range. The water meter must be capable of output to a datalogger.
 - ii. A datalogger that time stamps a pulse from the flow meter at least once every 15 minutes and has the capacity to hold at least twelve months data of water taken.
 - iii. A telemetry unit which sends all of the data to the Consent Authority.
- b) Provide telemetry data once daily to the Consent Authority. The Consent Holder must ensure data compatibility with the Consent Authority's time-series database and conform with Consent Authority's data standards.
- c) Within 20 working days of the installation of the water meter / datalogger/ telemetry unit, any subsequent replacement of the water meter / datalogger/ telemetry unit and at 5-yearly intervals thereafter, and at any time when requested by the Council, the Consent Holder must provide written certification to the Consent Authority signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
- i. Each device is installed in accordance with the manufacturer's specifications;
 - ii. Data from the recording device can be readily accessed and/or retrieved in accordance with the conditions above; and
 - iii. That the water meter has been verified as accurate.
- d) The water meter / datalogger / telemetry unit must be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
- e) All practicable measures must be taken to ensure that the water meter and recording device(s) are fully functional at all times.
- f) The Consent Holder must ensure the water meter returns accurate readings at all times including by routinely checking the device and removing any ice or debris build up.
- g) The Consent Holder must report any malfunction of the water meter / datalogger/ telemetry unit to the Consent Authority within 5 working days of observation of the malfunction. The malfunction must be repaired within 10 working days of observation of the malfunction and the Consent Holder must provide proof of the repair, including photographic evidence of any physical repairs, to the Consent Authority within 5 working days of the completion of repairs. Photographs must be in colour and be no smaller than 200 x 150 millimetres in size and be in JPEG form.
76. A water use efficiency report must be provided to the Consent Authority by 31 July each year for the period commencing 1 July the previous year and ending 30 June the current year. The report must assess the water use over the previous 12 months in respect of the efficient use of water for the purposes consented. This report must include, but not necessarily be limited to, the following:
- a) Area, crop type, number of harvests per year, and timing;
 - b) Annual summary of water usage (month by month, and related to crops in the ground);
 - c) Reasons why use may have varied from the previous year;

- d) Information demonstrating irrigation equipment that has been used and decision-making regarding efficiency of use (e.g. soil moisture data, irrigation scheduling, meter accuracy checks, computer control of irrigation) and any changes planned for the coming year;
- e) Measures undertaken to avoid loss or wastage of water including any bypass of water;
- f) Any changes or modifications to irrigation (and water conveyance) infrastructure; and
- g) Water conservation steps taken.

General

87. The Consent Holder must take all practicable steps to ensure that at all times:

- a) There is no leakage from pipes and structures;
- b) The use of water is confined to targeted areas, as illustrated on the attached plan as **Appendix 3** to this consent with the exception of the area identified in red;
- c) That the volume of water used for irrigation does not exceed that required for the soil to reach field capacity and avoids the use of water onto non-productive land such as impermeable surfaces; and
- d) That irrigation to land must not occur when the moisture content of the soils is at or above field capacity.
- e) Prior to the first exercise of this consent, the Consent Holder, the Consent Holder must install a backflow prevention device to ensure water and/or contaminants cannot return to the water source.

Review

98. 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 resource consent within three months of each anniversary of the commencement of this resource consent or within two months of any enforcement action taken by the Consent Authority in relation to the exercise of this resource consent, for the purpose of:

- a) Determining whether the conditions of this resource consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage, or which becomes evident after the date of commencement of the resource consent;
- b) Ensuring the conditions of this resource consent are consistent with any National Environmental Standards, relevant plans, and/or the Otago Regional Policy Statement;
- c) Reviewing the frequency of monitoring or reporting required under this resource consent;
- d) Reducing the consented instantaneous rate of abstraction, maximum monthly abstraction volume, and/or maximum annual abstraction volume (Condition 3); and/or changing the monitoring, operating, and reporting requirements (Conditions 54 and 65), in response to and/or to implement:
 - i. the results of monitoring carried out under this resource consent;
 - ii. water availability, including alternative water sources;

- iii. actual water use;
 - iv. efficiency of water use;
 - v. surface water allocation limits and minimum flows set out in any future regional plan, including any review of the Regional Plan: Water for Otago;
 - vi. surface water quality limits set out in any future regional plan, including any review of the Regional Plan: Water for Otago; and/or
 - vii. new statutory requirements for measuring, recording or data transmission.
- e) Imposing a minimum flow restriction as a condition on this resource consent if and when an operative regional plan sets a minimum flow for the catchment.

Notes to Consent Holder

1. *If you require a replacement water permit upon the expiry date of this water permit, any new application should be lodged at least 6 months prior to the expiry date of this water permit. Applying at least 6 months before the expiry date may enable you to continue to exercise this permit until a decision is made on the replacement application. Failure to apply at least 3 months in advance of the expiry date may result in any primary allocation status being lost. A late application may result in the application being treated as supplementary allocation if any such allocation is available.*
2. *For the purposes of Condition 7, 'Field Capacity' means the amount of water that is able to be held in the soil after excess water has runoff.*
3. *It is the responsibility of the consent holder to ensure that the water abstracted under this resource consent is of suitable quality for its intended use. Where water is to be used for human consumption, the consent holder should have the water tested prior to use and should discuss the water testing and treatment requirements with a representative of the Ministry of Health and should consider the following Drinking Water Standards*
4. *For the purposes of Condition 54, the water meter, data logger and telemetry unit should be safely accessible by the Consent Authority and its contractors at all times. The Water Measuring Device Verification Form and Calibration Form are available on the Consent Authority's website.*
5. *Section 126 of the Resource Management Act 1991 provides that the Consent Authority may cancel this consent by written notice served on the Consent Holder if the consent has been exercised in the past but has not been exercised during the preceding five years.*
6. *The Consent Holder is responsible for obtaining all other necessary consents, permits, and licences, including those under the Building Act 2004, the Biosecurity Act 1993, the Conservation Act 1987, and the Heritage New Zealand Pouhere Taonga Act 2014. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007 and the Health and Safety at Work Act 2015), regulations, relevant Bylaws, and rules of*

law. This consent does not constitute building consent approval. Please check whether a building consent is required under the Building Act 2004.

7. *Under section 125 of the RMA, this consent lapses five years after the date it is granted unless:
 - a. *The consent is given effect to; or*
 - b. *The Consent Authority extends the period after which the consent lapses.**
8. *Where information is required to be provided to the Consent Authority, this is to be provided in writing to watermetering@orc.govt.nz, and the email heading is to reference RM20.079.01 and the condition/s the information relates to.*
9. *The Consent Holder will be required to pay the Consent Authority an annual administration and monitoring charge to recover the actual and reasonable costs incurred to ensure ongoing compliance with the conditions attached to this consent, collected in accordance with Section 36 of the Resource Management Act 1991.*
10. *The consent holder must be aware of any rules that relate to the control of farm contaminants in runoff and leaching of nutrients to groundwater in relevant Otago regional plans and National Environmental Standards.*
11. *Water may be taken at any time for reasonable domestic or stock water purposes where and the taking or use does not, or is not likely to, have an adverse effect on the environment in accordance with Section 14 of the Resource Management Act 1991.*

Appendix 1 to Water Permit RM20.079.01: By-wash location

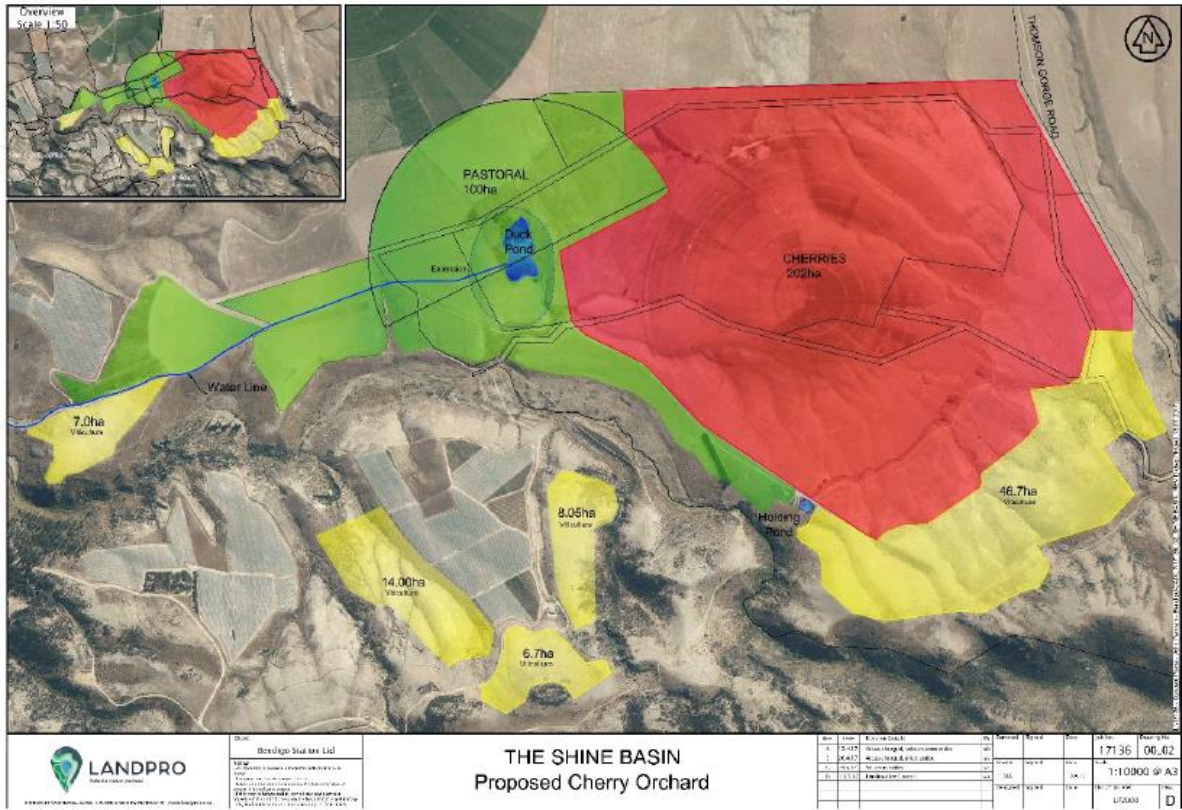


Appendix 2 to Water Permit RM20.079.01: Photographs (two)
showing intake structure





Appendix 2 to Water Permit RM20.079.01: Irrigation Areas



Our Reference: A1400995

Consent No. RM20.079.02

WATER PERMIT

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

Name: Bendigo Station Limited

Address: 1460 Tarras-Cromwell, RD 3, Cromwell

To take and use surface water as a supplementary allocation from Bendigo Creek and to retake and use water from a reservoir for the purpose of irrigation, stock water supply and domestic supply *and operating the Bendigo Station Pond*

For a term expiring 6 years from the commencement date

Locations of Points of
Abstraction:

Bendigo Creek: approximately 5.7 kilometres south east of the intersection of Bendigo Loop Road and Tarras-Cromwell Road (State Highway 7).

Bendigo Station Pond: Approximately 4 kilometres south east of the intersection of Bendigo Loop Road and Tarras-Cromwell Road (State Highway 7).

Legal Description of land at point of abstraction:

Bendigo Creek: Section 21 SO 24641

Bendigo Station Pond: Lot 8 DP 517385

Legal Description of land s where water is to be used: Lot 6 DP 525495, Lot 5 DP 517285, Lot 3 DP 391334, Lot 4 DP 391334, Part Lot 10 DP 391334, Lot 8 DP 517385, Lot 3 DP 459561, Lot 7 DP 517385, Lot 3 DP 525495, Lot 4 DP 525495, Lot 1 DP 525495, Lot 2 DP 525495 and Lot 6 DP 517385

Map References at points of abstraction:

Bendigo Creek: NZTM 2000: E1314483 N5018116

Bendigo Station Pond: NZTM 2000: E1313447 N5019532

Conditions

Specific

1. a) The take and use of surface water as supplementary allocation from Bendigo Creek and the retake and use of water from a reservoir for the irrigation of $\times 182.4$ hectares, stock water supply and domestic supply at the map references and land legally described above must be carried out in accordance with the plans and all information submitted with the application, detailed below and all referenced by the Consent Authority as consent number RM20.079:
 - i. The application and supporting information received by the Consent Authority on 10 March 2020 and addendums to application made on 22 May 2020 and 8 October 2020;
 - ii. Further information response received on 14 May 2020; and
 - iii. Hearing evidence [Date] Month 2020.

- b) If there are any inconsistencies between any conditions of this consent and the application, the conditions of consent must prevail.
2. ~~This Consent must only be exercised in conjunction with Water Permit RM20.079.01.~~
32. The rate of abstraction as supplementary allocation must not exceed:
- 100 litres per second when flows in Bendigo Creek at NZTM 2000 E1314218 N5018598 are at or above 150 litres per second;
 - 110 litres per second when flows in Bendigo Creek at NZTM 2000 E1314218 N5018598 are at or above 2450 litres per second;
 - 160 litres per second combined with Water Permit RM20.079.01 when flows in Bendigo Creek at NZTM 2000 E1314218 N5018598 are at or above 430-6250 litres per second.

OR

The rate of abstraction as supplementary allocation must not exceed:

Rate of abstraction	When flows in Bendigo Creek at NZTM 2000 E1314218 N5018598 are above:
20 L/s	70 L/s
40 L/s	90 L/s
60 L/s	110 L/s
80 L/s	130 L/s
100 L/s	150 L/s
110 L/s	160 L/s

43. The combined volume of abstraction from Bendigo Creek in conjunction with RM20.079.01 must not exceed:
- 235,948 cubic metres per month; and
 - 1,054,714 cubic metres in each 12-month period, commencing 1 July of any year and ending 30 June of the following year.
54. This consent must not be exercised when flows in Bendigo Creek at NZTM 2000: E1314218 N5018598 are below 150 L/s.

OR

This consent must not be exercised when flows in Bendigo Creek at NZTM 2000: E1314218 N5018598 are below 70 L/s.

Performance Monitoring

65. a) ~~Prior to the first exercise of this consent,~~ *The Consent Holder must at their own expense, install, operate and maintain a river flow recorder (sensor, logger, and associated equipment) within 20 metres of NZTM 2000 E1314218 N5018598;*
- b) ~~Within 3 months of the commencement of this consent installing the recorder,~~ and then at a minimum of five yearly intervals, the location, structures and equipment to be used for the purpose of determining flows as required by Condition 6(a) must be verified and provide written certification to the Consent Authority assigned by a suitably qualified and experienced person and demonstrating by means of a clear diagram, that:
- the recorder is installed in accordance with the manufacturer's specifications;
 - Data from the recording device can be readily accessed and/or

retrieved in accordance with the conditions above; and
iii. that the recorder has been verified as accurate.

- c) The Consent Holder shall provide evidence of the verification required by Condition 65(b) in writing to the Consent Authority within one month of the verification being completed.
 - d) All malfunctions of the flow recorder during the exercise of this consent shall be repaired and reported to the Consent Authority within 5 working days of discovery by the Consent Holder or notification to the Consent Holder. In the event of an equipment malfunction the consent holder must cease the taking of supplementary allocation.
 - e) The recorder must be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
 - f) The Consent Holder must ensure the recorder returns accurate readings at all times including by routinely checking the device and removing any ice or debris build up.
 - g) The flow recorder and the surrounding waterway must be available at all reasonable times for inspection by the Consent Authority for the purposes of assessing compliance with the conditions of this consent.
 - h) The flow recorder must record water flow at intervals of 15 minutes or less, and must update data at least daily to a database which is accessible to authorised users, including the Consent Authority.
76. a) ~~Prior to the first exercise of this consent, the~~ Consent Holder must ~~install~~ *maintain*:
- i. Water meter that will measure the rate and the volume of water taken to within an accuracy of +/- 5% over the meter's nominal flow range. The water meter must be capable of output to a datalogger.
 - ii. A datalogger that time stamps a pulse from the flow meter at least once every 15 minutes and has the capacity to hold at least twelve months data of water taken.
 - iii. A telemetry unit which sends all of the data to the Consent Authority.
- b) Provide telemetry data once daily to the Consent Authority. The Consent Holder must ensure data compatibility with the Consent Authority's time-series database and conform with Consent Authority's data standards.
 - c) Within 20 working days of the installation of the water meter / datalogger/ telemetry unit, any subsequent replacement of the water meter / datalogger/ telemetry unit and at 5-yearly intervals thereafter, and at any time when requested by the Council, the Consent Holder must provide written certification to the Consent Authority signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
 - i. Each device is installed in accordance with the manufacturer's specifications;
 - ii. Data from the recording device can be readily accessed and/or retrieved in accordance with the conditions above; and
 - iii. That the water meter has been verified as accurate.
 - d) The water meter / datalogger / telemetry unit must be ~~installed and~~ maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
 - e) All practicable measures must be taken to ensure that the water meter and recording device(s) are fully functional at all times.
 - f) The Consent Holder must ensure the water meter returns accurate readings at all times including by routinely checking the device and removing any ice or debris build up.

- g) The Consent Holder must report any malfunction of the water meter / datalogger/ telemetry unit to the Consent Authority within 5 working days of observation of the malfunction. The malfunction must be repaired within 10 working days of observation of the malfunction and the Consent Holder must provide proof of the repair, including photographic evidence of any physical repairs, to the Consent Authority within 5 working days of the completion of repairs. Photographs must be in colour and be no smaller than 200 x 150 millimetres in size and be in JPEG form.

Review

87. 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 resource consent within three months of each anniversary of the commencement of this resource consent or within two months of any enforcement action taken by the Consent Authority in relation to the exercise of this resource consent, for the purpose of:
- a) Determining whether the conditions of this resource consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage, or which becomes evident after the date of commencement of the resource consent;
 - b) Ensuring the conditions of this resource consent are consistent with any National Environmental Standards, relevant plans, and/or the Otago Regional Policy Statement;
 - c) Reviewing the frequency of monitoring or reporting required under this resource consent;
 - d) Reducing the consented instantaneous rate of abstraction, maximum monthly abstraction volume, and/or maximum annual abstraction volume (Condition 3); altering the minimum flow (Condition 52); and/or changing the monitoring, operating, and reporting requirements (Conditions 56 and 67), in response to and/or to implement:
 - i. the results of monitoring carried out under this resource consent;
 - ii. water availability, including alternative water sources;
 - iii. actual water use;
 - iv. efficiency of water use;
 - v. surface water allocation limits and minimum flows set out in any future regional plan, including any review of the Regional Plan: Water for Otago;
 - vi. surface water quality limits set out in any future regional plan, including any review of the Regional Plan: Water for Otago; and/or
 - vii. new statutory requirements for measuring, recording or data transmission.
 - e) Imposing a minimum flow restriction as a condition on this resource consent if and when an operative regional plan sets a minimum flow for the catchment.

Notes to Consent Holder

1. *Note: the water meter, data logger, telemetry unit and river flow recorder must be safely accessible by the Consent Authority and its contractors at all times. The Water Measuring Device Verification Form and Calibration Form are available on the Consent Authority's website.*

2. *It is the responsibility of the consent holder to ensure that the water abstracted under this resource consent is of suitable quality for its intended use. Where water is to be used for human consumption, the consent holder should have the water tested prior to use and should discuss the water testing and treatment requirements with a representative of the Ministry of Health and should consider the following Drinking Water Standards.*
3. *It is the responsibility of the consent holder to ensure that the water abstracted under this resource consent is of suitable quality for its intended use. Where water is to be used for human consumption, the consent holder should have the water tested prior to use and should discuss the water testing and treatment requirements with a representative of the Ministry of Health and should consider the following Drinking Water Standards*
4. *For the purposes of Condition 65, the water meter, data logger and telemetry unit should be safely accessible by the Consent Authority and its contractors at all times. The Water Measuring Device Verification Form and Calibration Form are available on the Consent Authority's website.*
5. *Section 126 of the Resource Management Act 1991 provides that the Consent Authority may cancel this consent by written notice served on the Consent Holder if the consent has been exercised in the past but has not been exercised during the preceding five years.*
6. *The Consent Holder is responsible for obtaining all other necessary consents, permits, and licences, including those under the Building Act 2004, the Biosecurity Act 1993, the Conservation Act 1987, and the Heritage New Zealand Pouhere Taonga Act 2014. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007 and the Health and Safety at Work Act 2015), regulations, relevant Bylaws, and rules of law. This consent does not constitute building consent approval. Please check whether a building consent is required under the Building Act 2004.*
7. *Under section 125 of the RMA, this consent lapses five years after the date it is granted unless:
a. The consent is given effect to; or
b. The Consent Authority extends the period after which the consent lapses.*
8. *Where information is required to be provided to the Consent Authority, this is to be provided in writing to watermetering@orc.govt.nz, and the email heading is to reference RM20.079.01 and the condition/s the information relates to.*
9. *The Consent Holder will be required to pay the Consent Authority an annual administration and monitoring charge to recover the actual and reasonable costs incurred to ensure ongoing compliance with the conditions attached to this consent, collected in accordance with Section 36 of the Resource Management Act 1991.*
10. *The consent holder must be aware of any rules that relate to the control of farm contaminants in runoff and leaching of nutrients to groundwater in relevant Otago regional plans and National Environmental Standards.*
11. *Water may be taken at any time for reasonable domestic or stock water purposes where and the taking or use does not, or is not likely to, have an adverse effect on the environment in accordance with Section 14 of the Resource Management Act 1991.*
12. *This Consent may be exercised in conjunction with Water Permit RM20.079.01.*

Our Reference: A1400996

Consent No. RM20.079.03

WATER PERMIT

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

Name: Bendigo Station Limited

Address: 1460 Tarras-Cromwell, RD 3, Cromwell

To dam water within a reservoir for the purpose of irrigation, stock water supply and domestic supply

For a term expiring 15 years from the commencement of this consent

Location of Damming: Approximately 4 kilometres south east of the intersection of Bendigo Loop Road and Tarras-Cromwell Road (State Highway 7).

Legal Description of land at point of damming: Lot 8 DP 517385

Map Reference at point of damming: NZTM 2000: E1313447 N5019532

Conditions

Specific

1. a) The damming of water within a reservoir at the map references, *as shown in **Appendix 1*** and land legally described above must be carried out in accordance with the plans and all information submitted with the application, detailed below and all referenced by the Consent Authority as consent number RM20.079:
 - i. The application and supporting information received by the Consent Authority on 10 March 2020 and addendums to application made on 22 May 2020 and 8 October 2020;
 - ii. Additional application received by the Consent Authority on 26 May 2020 and addendum provided 11 June 2020;
 - iii. Further information response received on 14 May 2020; and
 - iv. Hearing evidence [Date] Month 2020.
 - b) If there are any inconsistencies between any conditions of this consent and the application, the conditions of consent must prevail.
2. ~~Water taken and used by this consent must be restricted to surface water contained within the reservoir identified as "inner pond" as shown in **Appendix 1**.~~
 3. The maximum volume of water impounded must not exceed 53,820 cubic metres.
 4. ~~The Consent Holder must immediately notify the Consent Authority if the Consent Holder has reasonable grounds for considering that the dam is, or has become, dangerous.~~

Performance Monitoring

- 53.
- a) Within the first anniversary of the exercise of this consent, and every 5 years thereafter, the Consent Holder must review the dam's classification.
 - b) The Consent Holder must also review the dam's classification if, at any time:
 - i. any building work that requires a building consent is carried out on the dam; and
 - ii. the building work results, or could result, in a change to the potential impact of a failure of the dam on person, property, or the environment.
 - c) In reviewing the classification of the dam, the Consent Holder must:
 - i. apply the criteria and standards for dam safety set out in the New Zealand Dam Safety Guidelines 2015 published by the New Zealand Society of Large Dams (NZSOLD);
 - ii. give the dam one of the following classifications: low potential impact, medium potential impact or high potential impact; and
 - iii. submit the classification of the dam to a Chartered Professional Engineer experienced in dam safety for audit.
 - d) Within one month of the review, the consent holder must provide the Consent Authority with the classification given by the consent holder to the dam and a certificate from a **Recognised Engineer** that:
 - i. states that the classification of the dam accords with the New Zealand Dam Safety Guidelines 2015; and
 - ii. states that the engineer is a Chartered Professional Engineer experienced in dam safety.
 - e) If the review changes the classification of the dam from low potential impact to medium potential impact or high potential impact, the Consent Authority may review the conditions of this consent to impose conditions relating to dam safety. Conditions must be consistent with any relevant National Environmental Standards, Regulations, plans and/or the Otago Regional Policy Statement.

General

6. ~~The dam, spillway and associated structures must be operated and maintained to ensure that, at all times, they are structurally sound, pose no undue risk to human life, property, or the natural environment, and are able to perform satisfactorily their approved design standard.~~
74. The damming of water must not cause flooding, erosion, land instability, sedimentation, or property damage of any other person's property.

Review

85. 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 resource consent within three months of each anniversary of the commencement of this resource consent or within two months of any enforcement action taken by the Consent Authority in relation to the exercise of this resource consent, for the purpose of:
- a) Determining whether the conditions of this resource consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the resource consent and which it is appropriate to deal with at a later stage, or which becomes evident after the date of commencement of the resource consent;

- b) Ensuring the conditions of this resource consent are consistent with any National Environmental Standards, relevant plans, and/or the Otago Regional Policy Statement;
- c) Reviewing the frequency of monitoring or reporting required under this consent;
- d) Reviewing the need for public liability insurance cover to be held by the Consent Holder;
- e) Reviewing the conditions of this consent to impose conditions relating to dam safety if the potential impact classification of the dam changes from low to medium or low to high, in accordance with Condition 3.

Notes to Consent Holder

1. *For the purposes of Condition 5, a **Recognised Engineer** means: an engineer described in Section 149 of the Building Act 2004, and has some or all of the following competencies:*
 - *geotechnical principles;*
 - *design principles including structural, geotechnical, seismic, hydrologic and hydraulic principles;*
 - *dam construction techniques;*
 - *operation and maintenance of dams;*
 - *surveillance processes;*
 - *response to dam safety issues;*
 - *emergency planning and emergency response;*
 - *resolution of potential dam safety deficiencies; and*
 - *dam safety critical plant systems.*
2. *The Consent Holder is responsible for obtaining all other necessary consents, permits, and licenses, including those under the Building Act 2004, the Biosecurity Act 1993, the Conservation Act 1987, and the Heritage New Zealand Pouhere Taonga Act 2014. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007 and the Health and Safety at Work Act 2015), regulations, relevant Bylaws, and rules of law. This consent does not constitute building consent approval. Please check whether a building consent is required under the Building Act 2004.*
3. *The Consent Holder will be required to pay the Consent Authority an annual administration and monitoring charge to recover the actual and reasonable costs incurred to ensure ongoing compliance with the conditions attached to this consent, collected in accordance with Section 36 of the Resource Management Act 1991.*
4. *The consent holder must be aware of any rules that relate to the control of farm contaminants in runoff and leaching of nutrients to groundwater in relevant Otago regional plans and National Environmental Standards.*
5. *The Consent Holder is required by Section 153B of the Building Act 2004 to immediately notify the Consent Authority if the Consent Holder has reasonable grounds for considering that the dam is, or has become, dangerous.*
6. *The dam, spillway and associated appurtenant structures should ~~must~~ be operated and maintained to ensure that, at all times, they are structurally sound, pose no undue risk to human life, property, or the natural environment, and are able to perform satisfactorily in accordance with the latest addition of New Zealand Society for Large Dams Guidelines to their approved design standard.*

Appendix 1 to RM20.079.03: Dam design *and extent*

