BEFORE THE SOUTHLAND REGIONAL COUNCIL

APP-20191339

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF resource consent applications by Alliance Group Limited to take water and to discharge treated wastewater to enable mean processing at the Mataura Plant, Mataura

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STATEMENT OF EVIDENCE BY ADRIAN LOW

16 NOVEMBER 2020

INTRODUCTION

1 My name is Adrian David Low.

2 I hold a Bachelor of Science and a Master of Science from the University of Otago, and a Post-Graduate Diploma in Planning from Massey University.

3 I am an Associate with Mitchell Daysh Limited, an environmental consulting practice with offices nationwide. I have held this position for the past 12 years. Previously I was a Senior Resource Officer in the Resource Consents and Compliance department at the Otago Regional Council where I worked for three years.

4 I am a member of the Resource Management Law Association, and an Associate Member of the New Zealand Planning Institute.

5 In preparing for this hearing I have visited the Alliance Mataura Plant. I am familiar with industrial processing activities.

6 In preparing this evidence I have reviewed:

a. The applications and the associated technical reports that assist to make up the Assessment of Environmental Effects;

b. The statements of evidence of all of the other witnesses giving evidence on behalf of Alliance Group Ltd (**Alliance** or **the Applicant**);

c. The Section 42A report by Mr Mayhew, the various technical assessments in its appendices, and the various witness statements produced by the authors of those technical assessments;

d. Submissions made with respect to the applications; and

e. The report on the pre-hearing meeting dated 30 September 2020.

7 Whilst I appreciate that this is not a case before the Environment Court, I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance

with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SCOPE OF EVIDENCE

8 I confirm that my evidence relates to the proposal known as the Alliance Mataura Plant (**the Plant**) as described in Chapter 4 of the Assessment of Environmental Effects dated 31 May 2019 (**AEE**).

9 I have been asked by Alliance to provide evidence which reviews the effects of the activity and how they can be managed through conditions. To this extent, this evidence includes:

a. An overview of the key environmental effects of the various activities for which resource consent is sought;

b. An overview of the measures proposed by Alliance to avoid, remedy or mitigate the potential effects of those activities by way of proposed consent conditions; and

c. Discussion on key matters raised in the Section 42A report of Mr Mayhew, as well as submissions.

10 My colleague, Mr Kyle, has prepared evidence which assesses the operation of Mataura Plant in accordance with the proposed conditions against the relevant statutory planning framework.

11 For the sake of brevity, I do not repeat the conclusions from the AEE or technical assessments, but I do highlight key aspects where I consider doing so provides context to the proposed consent conditions in **Attachment 1** of my evidence. Those conditions utilise the consent conditions included in Attachment 9 of Mr Mayhew's report as a base document. The further amendments to the consent conditions that, in my opinion, should be made, are shown in red underline /~~strikethrough~~ text in **Attachment 1** (hereafter referred to as "**my strikethrough version**"). There are a number of conditions covered in grey highlight. These are conditions which have been developed in partnership with Hokonui Runanga to address cultural matters, on the basis of a 25 year consent term and with

UV and biological wastewater treatment upgrades at Years 5 and 15 respectively. I discuss these conditions and the context in which they are being volunteered in paragraphs 58 - 60 of my evidence below.

THE USE OF THE WEIR TO DAM AND DIVERT WATER

12 An existing weir and hydro race structure dams water in a channel adjacent to the Plant known as the 'hydro race'.

13 Most of the water in the hydro race (approximately 10 m^3/s) is diverted through a hydroelectricity turbine at the end of the race before being returned to the river immediately downstream of the Mataura Falls. Comparatively smaller amounts are abstracted from the hydro race for use in the Plant. This includes:

a. Approximately 0.2 m^3/s which is abstracted and passed through a series of condensers to help with cooling processes before being returned to the hydro race in the immediate vicinity of where it was taken; and

b. Up to 0.191 m^3/s which is abstracted for use in processing before being discharged back to the Mataura River downstream of the Mataura Falls in the Plant's wastewater discharge.

14 AUTH-20171566-01 / AUTH-20171566-02 authorise this damming and diversion, and the operation of the hydroelectricity turbine until 1 November 2026 subject to a range of conditions. These consents were granted in 2019 following a hearing which involved the same submitters as are involved in these applications (**2019 hydro consent process**). A separate consent with the same expiry date authorizes the damming and diversion of water in this same manner (also via the existing weir) to enable the operation of the hydroelectricity turbine on the other side of the river.

15 In this regard, Mr Mayhew considers the damming and diversion of water in the manner proposed and its associated effects form part of the existing environment until 1 November 2026, and I agree. Mr Mayhew has also recommended that the consents sought as part of this process to use the weir to assist with the abstraction of cooling and process water have an

expiry date which aligns with the hydro consents to allow all the activities to be considered in an integrated manner when the hydro consents expire.

16 Mr Kyle provides an assessment of the relevant rules which apply to the weir related activities insofar as they relate to the process and cooling water abstractions. Mr Kyle concludes the only consent required is a s13 land use consent to fix a potential oversight during the hydro consent process (in which a s13 land use consent to use the weir was not sought) until new permitted activity Rule 60(ab) of the Proposed Southland Water and Land Plan (**Proposed Plan**) becomes operative.

17 Based on Mr Kyle's assessment, Alliance has accepted Mr Mayhew's recommendation that a s13 land use consent be granted which authorizes the activity until 1 November 2026.

18 In my strikethrough version of the conditions, the s13 land use consent to use the weir is subject to the same term and conditions as the corresponding s14 water permits (AUTH-20171566-01 AUTH-20171566-02). I note Mr Mayhew has included additional conditions on this consent which address extending the trap and transfer programme to kanakana. It was the intention of Alliance and Hokonui Runanga that this matter would be dealt with in partnership via the Memorandum of Understanding (**MoU**) and Kaitiaki Plan conditions I discuss further in paragraphs 58 – 60 below. On that basis I have not included those conditions on my strikethrough version.

THE TAKE AND USE OF WATER

19 Two resource consents have been sought to take and use water:

a. A water permit to take up to 21,000 m^3/day for cooling purposes (**cooling water take**); and

b. A water permit to take up to 8,000 m^3/day for processing and truck washing purposes (**process water take**).

20 In my assessment there is agreement between submitters and the various experts appearing on behalf of the Applicant and Environment Southland

(**Council or Consent Authority**) that the effects of these abstractions will be acceptable, with key conclusions being:

a. The cooling water is a 'non consumptive take' and meets the associated definition in both the Water Take Regulations and the Proposed Plan;[1]

b. The processing water take will reduce the flow in the river between the weir and wastewater outfall (a distance of approximately 350m);[2]

c. The reduction in instream flows due to the process water abstraction is very small, amounting to approximately 8,000 m^3/day or a reasonable worse case instantaneous take of 194 L/s. This represents about 1.2 % of Mean Annual Low Flow (**MALF**);[3]

d. The effects of this slight reduction in instream flows are acceptable noting:

    i. Dr James' conclusion (which does not appear to have been contested by any submitter or the s42A report and its supporting technical reviews) that the small size of the take relative to the river flow and the very minor effect of the take on minimum flow duration and flow variability, will result in only negligible effects on dissolved oxygen, contaminant concentrations and river water temperature, and is not expected to alter water quality or affect fish populations;[4] and

    ii. The abstractions are included in Environment Southland's total allocation for the catchment, which is set in accordance with the Mataura Water Conservation Order (**Mataura WCO**);[5] and

1 S42A, page 28.
2 S42A, page 28.
3 Dr James, paragraph 28.
4 Dr James, paragraph 28.
5 S42A, page 38.

e. The potential effects of entraining fish in the intakes (including taonga and mahinga kai species) can be suitably addressed by installing new intake screens with a mesh size of 2 – 3 mm or less.[6]

21 Also of relevance to these abstractions is the assessment of Mr Kyle and Mr Mayhew that the planning framework specifically requires the use of water onsite to be reasonable for the intended use, and that it will be used efficiently.[7] Mr Khan has provided an assessment of why this is the case at the Plant.[8] Mr Khan's assessment identifies an opportunity to improve water use efficiency within the Plant by using recycled whitewater in the wastewater treatment plant, and Mr Richardson has confirmed this is something Alliance wants to pursue.[9] But this has potential implications for discharge quality, which need to be carefully considered to avoid unforeseen adverse toxicity and eutrophication effects on aquatic organisms within the mixing zone and downstream as a result of the project concentrating (but not increasing the load) of contaminants in the discharge. The relevant condition requiring implementation of the whitewater recycling measure in my strikethrough version addresses this.[10] It is included on the wastewater consent and addressed in paragraph 42(c) of my evidence below.

22 Reflecting the above, my strikethrough version of the conditions on the water take permits largely align with those contained in Mr Mayhew's report, including:

a. Water take metering and reporting which accords with the current iteration of the Water Take Regulations, including an update to condition 3 to require 15-minute reporting in response to changes which were made to those regulations in 2020;[11]

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6 Dr James, paragraph 38; S42A page 36; Aukaha Cultural Impact Assessment paragraph 2.5 and Recommendation 2 in paragraph 4.2; DoC submission; Fish & Game submission.

7 Mr Kyle, paragraph 78,

8 Mr Khan, paragraphs 24 - 30.

9 Mr Richardson, paragraphs 24 – 26.

10 See proposed conditions 8 and 9 on my strikethrough version of the wastewater permit.

11 With the exception of the specified update to condition 3, these conditions are the same as were agreed appropriate by Council in 2018 following a review of the Plant's abstraction against the Water Take Regulations.

b. A requirement for the consent holder to maintain and implement a low flow contingency plan to minimise abstraction during periods of low flow;[12] and

c. A requirement to fit all intake structures with screens containing a mesh size of 2 – 3 mm or less.

23 Of relevance with respect to (b) above, Mr Mayhew's version of the wastewater discharge permit also includes an additional contingency plan condition requiring measures be undertaken to reduce effects of the river during extreme low flow events (defined as when the flow of the Mataura River at the Tuturau recording site is less than 10 m^3/s).[13] Mr Mayhew's condition is taken from the existing wastewater permit for the site. As outlined by Mr Richardson, the only difference in the measures taken at the two different flow levels is Alliance bring an independent auditor onsite when flows drop below the 10 m^3/s level. I see no practical or effects-based reason for Alliance maintaining two separate low flow contingency plans, and my strikethrough version includes a single condition and Low Flow Contingency Plan which applies to both consents. My version of the Low Flow Contingency Plan conditions includes an additional clause requiring an independent audit of water use to identify any additional water saving measures that could be undertaken in the event the flow of the Mataura River is less than 10 m^3/s.

24 The differences between my strikethrough version of the water take conditions and those contained in Mr Mayhew's report are:

a. My strikethrough version includes a 25 year term of consent which aligns with that which I have included on the wastewater permit for reasons set out later in my evidence.

[12] The Low Flow Contingency Plan which describes the practicable measures to be taken by the Consent Holder to minimise the abstraction of water during times when the flow of the Mataura River at the Tuturau recording site is less than 20 cubic metres per second. This approach is common to both the Mataura and Lorneville Plant's and recognises the important animal welfare role these plant's play during draught conditions and its need to continue operating at these times.

[13] See condition 24 on Mr Mayhew's version of the wastewater permit, and condition 40 on my strikethrough version.

b. My strikethrough version requires the intake screens to be installed within two years of the commencement of consent rather than the one year required by Mr Mayhew. Mr Richardson describes the company preference for allowing it two years to complete this work in his evidence,[14] and based on the evidence of Dr James[15] and Ms Bennett,[16] there do not appear to be any ecological effects of concern which mean Mr Richardson's preference should not be accommodated.

c. My strikethrough version includes an additional condition 2A on the cooling water take consent requiring the activity to be in general accordance with the information contained in the AEE lodged in support of these applications. Alliance agreed to include this condition at the request of Hokonui Runanga to provide them certainty that the cooling water would continue to be returned to the hydro race in the manner described, and that the activity would continue to be non-consumptive.

DISCHARGE OF COOLING WATER

25 After passing through the Plant's condensers, the cooling water is returned to the hydro race in the immediate vicinity of the points it is taken.

26 No effects of concern have been raised with this discharge in the AEE and various technical assessments, submissions, the evidence of other witnesses for Alliance, or Mr Mayhew's s42A report and its appendices. The only potential effect of this discharge on the Mataura River is an increase in temperature, however, monitoring has shown any change that does occur is not statistically significant and of no ecological concern.[17]

27 Reflecting the above, my strikethrough version of the conditions of the cooling water discharge permit largely aligns with those contained in Mr Mayhew's report, including:

[14] Mr Richardson, paragraph 28.
[15] Dr James, paragraph 140.
[16] Ms Bennett, paragraph 19.
[17] Dr James, paragraph 50. Dr Wilson paragraph 96.

a. Periodic monitoring of temperature and oxygen content in the water race upstream and downstream of the point of discharge to confirm effects are as expected and acceptable;[18] and

b. Receiving water standards which reflect those contained in the Operative Land and Water Plan (**Operative Plan**) and Proposed Plan for the Mataura 3 surface water classification which applies to this stretch of the river.[19]

28 The only differences between my strikethrough version of the conditions and those attached to Mr Mayhew's report are:

a. My strikethrough version includes a 25 year term of consent which aligns with that which I have included on the wastewater permit for reasons set out later in my evidence; and

b. My strikethrough version includes an additional condition 2A for the reasons set out in paragraph 24(c) above.

DISCHARGE OF WASTEWATER

29 Figure 1 in Mr Mayhew's report identifies the location where wastewater from the Plant is discharged to the Mataura River downstream of Mataura Falls.

30 Historical records of the discharge volume and quality are described in Mr Montgomerie's evidence.[20] Important context to those records is also provided in Mr Richardson's evidence. Particularly, in respect of how changes in the cleaning and hygiene requirements for processing stock, changes in cattle numbers and weights, and changes in product requirements all influence discharge volumes.[21]

31 A number of technical assessments on the potential effects of the discharge on Mataura River were commissioned to support the resource

[18] Conditions 3 and 4.

[19] Condition 5.

[20] Mr Montgomerie, paragraphs 69 – 85.

[21] Mr Richardson, paragraph 44.

consent applications sought by Alliance. These assessments were included as appendices to the AEE document and included:

a. An Assessment of the Effects of Alliance Mataura's Discharges and Water Take on Mataura River and Toetoes Estuary by Freshwater Solutions and Aquatic Environmental Sciences. Dr James and Mr Montgomerie, who are providing evidence on behalf of Alliance, were the primary authors of this document.

b. A Quantitative Microbial Risk Assessment of the Mataura Plant's wastewater discharge. Dr Dada, who is providing evidence on behalf of Alliance, was the primary author of this document.

c. A report which used a mixing modelling approach using contaminant tracers to determine the mixing zone of treated wastewater from Alliance Mataura discharged into the Mataura River. Dr Dada, who is providing evidence on behalf of Alliance, was the primary author of this document.

d. An assessment of the in-river recreation values of the Mataura Catchment by Rob Greenaway & Associates.

32 The findings of these reports are summarized in Chapter 8 of the AEE, while Chapter 9 provided a more general overview of the management and mitigation measures proposed to address the effects identified in those assessments.

33 Following receipt of the applications, Environment Southland commissioned various technical reviews of the application and the information provided by Alliance. The findings of those reviews are summarized in Mr Mayhew's s42A report, and the various evidence of the technical reviewers appended to his report.

34 Having reviewed that material, in my assessment, the various technical witnesses reach very similar conclusions on most of the key effects of the discharge on water quality, biological values, human health and recreation values, insofar as:

a. There is general agreement that the point of complete mixing is between 100 and 150 m downstream from the discharge.[22]

b. There is agreement that the water quality parameters in the receiving water, which are significantly elevated by the discharge outside the mixing zone, are ammoniacal-N and *E.coli*.[23]

c. There is agreement that while ammoniacal-N concentrations move from National Policy Statement for Freshwater Management 2020 (**NPS-FM**) State A upstream to NPS-FM State B downstream of the mixing zone, the more sensitive species found in this part of the Mataura River are equally protected by water NPS-FM State B.[24]

d. There is an increase in phosphorus downstream at times but concentrations in the discharge are relatively low, and phosphorus can be released from sediments which may, in part, explain higher levels further downstream at the Bridge site.[25] There is no indication this is causing eutrophication downstream.[26]

e. At times the discharge may contribute to a small increase in total suspended solids (**TSS**) downstream of the Plant in combination with the effect of the energy from the Mataura Falls resuspending fine material and the discharge.[27] However, any such increase does not appear to cause any ecological effects.[28]

f. There is agreement that the discharge from the Plant will be contributing to cumulative levels of nutrient enrichment in the Mataura River downstream of the Plant and in Toetoes Estuary.

g. There is agreement that exceedances of the New Zealand single sample bathing water standards are common within the Mataura

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[22] This is described by Dr Dada in paragraph 24(c) and Dr James in paragraph 47 and does not appear to have been challenged by any other witness.

[23] Dr James, paragraph 176; Dr Wilson paragraph 84.

[24] Dr James, paragraph 21; Dr Wilson paragraphs 33 and 34.

[25] Dr James paragraph 131; Dr Wilson paragraph 88.

[26] Dr James, paragraph 23; Dr Wilson, paragraph 88.

[27] Mr Montgomerie, paragraphs 99 and 127; Dr Wilson, paragraph 91.

[28] Dr James, paragraph 19; Dr Wilson, paragraph 91.

catchment, that the river is classified as NPS-FW Attribute State E (Red), both upstream and downstream of the Plant, and that the Plant's discharge significantly elevates *E. coli* concentrations downstream of the Plant.[29]

h. There is agreement that the parameters Alliance should be affording priority to reducing in its discharge as part of catchment wide efforts to improve degraded water quality are *E.coli*, ammoniacal-N and Total Nitrogen (**TN**).[30]

i. There is agreement that the proposed mitigation using UV treatment will reduce any increase in *E.coli* levels below the Plant substantially, and following biological treatment, the discharge may dilute *E.coli* and improve water quality relative to upstream;[31]

j. There is agreement that the proposed mitigation using UV treatment, and then the biological treatment plant upgrade is an appropriate response to address the effects of the discharge on public health.[32]

k. There is agreement that upgrading the wastewater treatment plant to achieve the discharge quality prescribed in condition 5 of my strikethrough version is an appropriate response to maintaining and enhancing water quality in this catchment based on current knowledge.[33]

l. There is agreement that biological treatment will substantially reduce nutrient loads in the discharge, but that this reduction is unlikely to result in a material improvement in the Toetoes Estuary without wider catchment reductions.[34]

[29] Dr Dada, paragraph 24; Dr Wilson, paragraphs 19 & 20.
[30] Dr James, paragraph 31; Dr Wilson, paragraph 84.
[31] Dr Dada, paragraphs 24 and 38; Dr Wilson, paragraph 85.
[32] Dr Dada, paragraph 17; Dr Poore, paragraph 33.
[33] Dr James, paragraphs 31 and 32; Dr Wilson, paragraph 84.
[34] Dr James, paragraph 24; Mr Mayhew, page 45.

m. There is agreement the discharge will not give rise to adverse effects on other users.[35]

35 In my assessment, there is also a degree of agreement between the technical witnesses for Alliance and Environment Southland that the wastewater treatment plant upgrades proposed by Alliance should be done 'as soon as they can' because those improvements will contribute to improving aspects of the water quality in the Mataura River which are currently degraded.

36 Where they seem to differ is on the relative urgency of the need for those upgrades to occur relative to wider catchment improvements.

37 Dr Wilson, for example, identifies potential ammonia toxicity effects in the mixing zone, and Alliance's 'substantial' and 'disproportionate' contribution to catchment nutrient loads, as reasons for needing to install biological treatment much faster than proposed. However, Dr James provides further comment in his evidence on why he does not consider the effects of the existing discharge justify the urgency conveyed in Dr Wilson's evidence and Mr Mayhew's s42A report and the 5 year upgrade timeframe they propose.[36]

38 Likewise, Dr Poore advises a precautionary approach to addressing the public health risks would be to complete the installation of the UV plant and upgrade to the wastewater treatment plant in a more timely manner than is proposed.[37] In that regard, Dr Poore has urged that the findings of the Quantitative Microbial Risk Assessment (**QMRA**) completed for the discharge be treated with caution where it finds the individual illness risk levels attributable to the discharge are below the acceptable "no observable effects" threshold of 1% for all zoonotic pathogens.[38] Dr Dada provides further comment on Dr Poore's concerns in his evidence, outlining why, in his view, the QMRA is robust, and how Dr Poore's various

[35] Mr Mayhew, page 38.
[36] Dr James, paragraphs 143 – 147.
[37] Dr Poore, paragraph 22.
[38] Dr Poore, paragraphs 18 and 19.

reservations with that assessment are addressed.[39] Dr Dada has also identified how additional monitoring early in the new consent term would provide further comfort.[40] As I outline in paragraphs 50 - 52 below, I have included that monitoring in my strikethrough version of the conditions.

39 Reflecting the importance of the Mataura River in general, and e Au-Nui-Pihapiha-Kanakana/Mataura Falls in particular, two Cultural Impact Assessment (**CIA**) documents were also commissioned by Alliance in respect of its wastewater discharge. They provide a comprehensive description of the cultural values attributed to the Mataura River and the immediate environment, the effects of the discharge on those values, and how those effects could be addressed. I expect Hokonui Rūnunga will speak to those documents at the hearing. However, in my view, they have been immensely helpful in identifying how the activity impacts on the values attributed to this environment, and how those effects could be addressed by Alliance working in partnership with Hokonui Runanga. They have also informed the development of conditions in partnership with Hokonui Runanga which I address further in paragraphs 58 – 60 below.

Conditions

40 There is a high degree of alignment between my strikethrough version conditions and those in Mr Mayhew's s42A report.

41 The main differences being:

a. The term of consent, and the approach to dealing with any uncertainty in how the application and its upgrade regime will align with relevant water quality guidelines or standards included within the relevant Regional Plan to give effect to the NPS-FW, and progress in the Mataura Freshwater Management Unit towards maintaining and improving water quality to achieve the relevant water quality limits.

b. The timeframes within which the conditions require Alliance to upgrade its wastewater treatment system, first to disinfect the

[39] Dr Dada, paragraphs 39 – 66.

[40] Dr Dada, paragraph 55.

wastewater and inactivate pathogens and then undertake full biological treatment.

42 In that regard I note:

a. Both sets of conditions contain the same 'pre upgrade' discharge standards on contaminant concentrations and load. The only difference is I have deleted the daily load limit for dissolved reactive phosphorus (**DRP**). The daily limit of 14.4 kg has been taken from the existing wastewater discharge permit for the Plant and has become redundant with insertion of the new 12 month rolling median and 95th percentile limits which are not on the existing consent, and which Dr James considers will protect the in-river system.[41] [42]

b. Both sets of conditions contain the same instream limits which apply pre and post the upgrade.[43] These reflect the limits contained in the Operative and Proposed Plans for the Mataura 3 surface water classification which applies to this stretch of the river.

c. Both sets of conditions require implementation of the resilience and water efficiency measures described in the Pattle Delamore Partners report included as Appendix 8 of the AEE (**PDP resilience and water efficiency report**).[44] However, my strikethrough version includes amended conditions setting out how this will be done.

   The resilience measures are described in some detail in the PDP resilience and water efficiency report, and rather than require those measures to be implemented via a management plan framework, my strikethrough version of the conditions simply require they be implemented within three years of the commencement of the

[41] Dr James paragraphs 134 – 136 and 160 – 162.

[42] Condition 3.

[43] Condition 7.

[44] Alliance Mataura Plant – Water Use and Wastewater Management Resilience Assessment. Prepared for Alliance Group Limited. May 2019.

consent.[45] Progress on implementing these measures is to be set out in the Annual Monitoring Report.[46]

I have also included specific conditions which address the whitewater recycling project.[47] A key aspect of these conditions is input from a suitably qualified and experienced ecologist pre and post the project to ensure that any reduction in the wastewater volume does not 'concentrate' the contaminants in the discharge to an extent that it has adverse ecological effects. My strikethrough version of the conditions includes provision for Council to certify alternative concentration limits for the parameters set out in condition 3, where doing so would enable the project to proceed while protecting instream values.[48]

d. Both sets of conditions require the Consent Holder to install equipment to disinfect the process wastewater discharged from the site in order to inactivate pathogens, and prescribe the same additional limit on *E.coli* in the discharge after commissioning that upgrade.[49] The conditions differ on when this upgrade must occur. I address this difference in paragraphs 49 - 52 below.

e. Both sets of conditions require the Consent Holder to upgrade its wastewater treatment plant to improve discharge quality, particularly in respect of ammoniacal-N and TN. For the most part, the two versions of the conditions contain the same 'post upgrade' discharge standards on contaminant concentrations and load.[50] The exceptions being:

    i. My strikethrough version contains a minor change to the TSS limits, which I explain in paragraph 56 below.

[45] Condition 8.
[46] Condition 43.
[47] Conditions 9 and 10.
[48] Conditions 9 and 10.
[49] Conditions 4 and 11 – 15.
[50] Condition 5.

ii. I have deleted reference to the daily DRP load limit for the reasons set out in (a) above.

iii. I have deleted the daily cBOD5 load condition which is the same limit which applies currently. It becomes redundant following the upgrade because of the discharge needing to meet the new, more stringent cBOD5 concentration limits. I have not replaced the load limit on the basis of Dr James' assessment that the concentration limit will suitably protect the in-river system.[51]

The two versions of the conditions differ on when the upgrade needs to occur, and in turn, the new more stringent limits in condition 5 apply. Mr Mayhew's conditions require it to be fully commissioned and operational no later than five years from the commencement of the new consent term. My strikethrough version requires this to occur no later than fifteen years from commencement. The reasons for this difference are discussed in paragraphs 53 – 55 below.

f. Both sets of conditions afford the Consent Authority the ability to review the conditions of the consent (including the post upgrade discharge limits), following any Regional Plan or plan change giving effect to the NPSFM 2020 becoming operative for the purposes of:

i. Amending the discharge standards and loads to reflect the objectives and limits set in the Regional Plan, including the timeframes by which amended discharges standards and loads are required to be achieved; and

ii. Providing for any investigations necessary to identify Plant improvements required to achieve any revised discharges standards and limits.[52]

However, as described in paragraphs 45 - 48 below, my strikethrough version contains an additional step to facilitate this process. It requires the consent holder to commission an appropriately qualified

[51] Dr James, paragraph 134 – 136.

[52] Conditions 23 and 54.

independent expert(s) to conduct a review of the activity in light of the new plan provisions, and determine whether it is necessary to impose new limits to be consistent with the requirements of the relevant Regional Plan.[53] A copy of the review is to be provided to the Consent Authority, and if it recommends that amendments to the compliance limits set by this consent are necessary, then the Consent Authority may initiate a formal review of the post upgrade limits for these parameters.

g. Both sets of conditions require the consent holder to prepare and submit to the Consent Authority a Wastewater Treatment Plant Upgrade Plan (**Upgrade Plan)** which identifies the technology and wastewater treatment plant upgrades necessary to improve the quality of the wastewater discharged to the Mataura River in order to meet 'post upgrade' standards and limits.[54] However, they differ on when this plan needs to be submitted. Mr Mayhew's conditions require it to be submitted much earlier (Year 1) reflecting the requirement in his conditions for the upgrade to occur by Year 5. My strikethrough version accommodates and implements the iterative Discharge Review Process Alliance proposes to undertake, in partnership with Hokonui Runanga, which would commence early in the consent process. That process is described in paragraph 59 below. If the first Discharge Review Process (which would commence in Year 2 of the new consent term) does not identify an alternative treatment and discharge option, my strikethrough version would mean the Upgrade Plan would be submitted in approximately Year 8 of the consent term, by which time it is expected the outcome of the Freshwater Management Unit (**FMU**) process would be known and feed into the Upgrade Plan.

[53] Condition 23.

[54] Conditions 24 – 26.

h. Both sets of conditions require biannual reporting on progress towards implementing and commissioning the Upgrade Plan following its submission.[55]

i. Both sets of conditions require a post upgrade review by appropriately qualified and independent experts to determine whether the anticipated water quality improvements have been achieved by the upgrade, and whether the post upgrade limits on discharge quality and load are appropriate to maintain and enhance water quality and ecological health in the Mataura River.[56] This review will include an evaluation of the monitoring results and a review of the relevant guidelines or standards that may apply for such parameters. The results of this review are to be submitted to the Council, and if this review recommends amendments to the limits in the conditions, then it is able to initiate a formal review of the consent in accordance with s128 of the Resource Management Act 1991 (**RMA**), and potentially look to revise the post upgrade limits, if necessary, as a result of this review. This reporting and review condition is almost identical to that which is included on the corresponding Lorneville consent. Mr Wiese explains how those conditions have resulted in Alliance considering installing a much more costly wastewater treatment plant upgrade at that site than is strictly necessary to meet the post upgrade discharge quality conditions contained on that consent.[57]

   Because of the difference in upgrade timing, Mr Mayhew's conditions would see this upgrade review report being provided to Council in Year 6 or 7 of the consent term, around the time it is likely the FMU process referred to in clause (g) above is concluding. My strikethrough version of the conditions would see this report being provided to Council in Year 16 or 17 of the new consent term.

j. Both sets of conditions require the preparation and implementation of an Environment Monitoring Plan (**EMP**). This plan is to set out the

[55] Condition 26.
[56] Condition 28.
[57] Mr Weise, paragraph 13.

discharge and water quality monitoring requirements, specify details such as the monitoring sites, and to detail the specifics of the monitoring requirements for the biological and fish health surveys.[58] The only differences between my strikethrough version of these conditions and those attached to Mr Mayhew's report are:

i. My version includes various additions which were agreed during consultation with Hokonui Runanga. These are discussed further in paragraphs 58 – 60 below.

ii. My version includes additional requirements for monitoring clarity, TSS, turbidity and colour during the period November – April (the key contact recreation period).[59]

k. Both sets of conditions require a Contingency Plan to be maintained and implemented in the event of a discharge of raw or partially treated wastewater from any part of the reticulation system to the Mataura River.[60]

l. Both sets of conditions contain the same reporting obligations.[61] They require that if an exceedance of any of the limits specified in the consent is detected, then this shall be notified to the Council, along with the identification of the likely cause, the effects, the management response undertaken and whether any further remedial work might be required to address it.[62] They also require the consent holder to prepare an annual report detailing the results of the monitoring undertaken that year, and to undertake an assessment of the effects of the discharge on river water quality and periphyton and benthic invertebrate communities.[63] My strikethrough version extends these reporting obligations to include Hokonui Runanga, as this is an

[58] Conditions 30 – 35.
[59] Condition 34(iv).
[60] Condition 39.
[61] Conditions 40 – 43.
[62] Conditions 6 and 42.
[63] Condition 43.

outcome sought by the Runanga during consultation. This is addressed further in paragraph 58 – 60 below.

m. Both sets of conditions provide for the ongoing facilitation of the Technical Working Party (**TWP**), which is discussed in the evidence of Mr Richardson. Invitations to key stakeholders including Fish and Game, DoC, Te Ao Marama, Hokonui Rūnanga, Public Health South and the Councils will be extended to form part of the TWP, and regular meetings will be held to inform the group of monitoring results, any issues arising, and progress with regard to the wastewater upgrade system.[64]

n. Both sets of conditions provide the Council with the opportunity to initiate a formal review of the conditions for the purposes described in paragraph 42(f) and 42(i) above, and for the purposes of:

   i. Amending the monitoring and reporting conditions, including the EMP, to ensure that they continue to provide accurate and relevant information on the effects of the discharge; and

   ii. Addressing any unanticipated adverse effect on the environment which may arise from the exercise of the consent, including the content and application of any Contingency Plans and the revision of the best practicable option to address any adverse effects.[65]

43 In the paragraphs below I further address the key points of difference between the conditions in Mr Mayhew's report and in my strikethrough version, namely:

a. The term of consent.

b. Upgrade timeframes.

c. The minor changes in my strikethrough version to the post upgrade limits for TSS.

[64] Conditions 49 – 51.
[65] Condition 53.

d. The need for monthly and annual restrictions on wastewater volumes to control contaminant loading.

e. The additional conditions contained in my strikethrough version to address cultural matters and implement the various recommendations contained in the CIA documents.

44 For completeness, I note my strikethrough version also includes various changes to condition numbering to accommodate my additional conditions. I have not track changed the condition numbers, however, I have tracked where I have updated the cross referencing within conditions as a result.

Consent Term and Uncertainty in the Outcome of the FMU Process.

45 Mr Kyle addresses the matter of the consent term in his evidence.[66] I agree with his analysis, and my strikethrough version of the conditions affords the applicant a 25 year term rather than the 10 years proposed in Mr Mayhew's s42A report.

46 Central to Mr Kyle's analysis is his assessment that the conditions in my strikethrough version provide a suitable mechanism to ensure that the activities will remain current and in step throughout the life of long term consents, with ongoing limit setting in the FMU and broader water quality improvements across the catchment.

47 The relevant conditions in that respect are:

a. Conditions 23 and 28 in my strikethrough version which require the consent holder to commission and furnish the Council with a thorough review by appropriately qualified independent experts of its discharge limits and effects on the environment. Two reviews are required – one within six months of the new Regional Plan provisions, which give effect to the NPSFW 2020 in the Mataura FMU becoming operative (likely to be around Year 6 of the new consent term), and one

[66] Mr Kyle, paragraphs 101 – 105.

following the commissioning of the Wastewater Treatment Upgrade (likely to be around Year 16 of the new consent term); and

b. In the event one of these reviews recommends amendments are necessary, conditions 53 and 54 which enable the Consent Authority to initiate a formal review of the discharge standards and loads, including the timeframes by which amended discharges standards and loads, are required to be achieved.

48 Also relevant are the new Discharge Method Review conditions I address in paragraphs 58 – 60 below which have been developed in partnership with Hokonui Runanga. They require up to three reviews during the consent term (at Years 2, 7 and 20) to confirm new treatment and land based discharge options have not become available which would enable a discharge to the Mataura River to cease in time.

Upgrade Timeframes to address *E.coli*

49 There is general agreement that the proposed upgrade of the wastewater treatment plant to inactivate pathogens, and the associated standards on discharge quality in conditions 4 and 5, are an appropriate means of addressing the risk to human health due to the Plant's discharge.

50 However, there is disagreement over the extent of the incremental risk which exists until the upgrade occurs and by when it should occur.

51 Dr Dada provides further assessment of the incremental risk in his evidence, and based on that evidence, Mr Kyle sets out why, in his assessment, a five-year timeframe for commissioning the upgrade remains appropriate.[67] I agree with Mr Kyle's analysis, and my strikethrough version of the conditions requires the Applicant to upgrade its wastewater treatment plant to inactivate pathogens within five years of the commencement of the consent, rather than the one year proposed in Mr Mayhew's s42A report.

[67] Mr Kyle, paragraphs 86 - 100.

52 Dr Dada has addressed the various concerns raised by Dr Poore with the relative risk imposed by the Plant's discharge until such time as the upgrades occur. However, to the extent there remains any doubt due to the limited data set which informed Dr Dada's analysis, he has suggested additional data be collected early in the consent and the QMRA be redone using the updated data. This is covered by new conditions 11, 12 and 13 which I have included in my strikethrough version. They require collection of additional data over the first 12 months of the consent, a further QMRA using that data to be provided three months later, and the Consent Holder to commission the upgrade within a further 12 months in the event it identifies the individual illness risk levels attributable to the discharge are not below the acceptable "no observable effects" threshold of 1% for all zoonotic pathogens.

Upgrade Timeframes for Biological Treatment

53 There is general agreement between the technical witnesses for Alliance and Environment Southland that upgrading the Plant's wastewater treatment plant to achieve the various standards on discharge quality in condition 5 is an appropriate response, considering current knowledge of the catchment and the Plant's discharge.

54 There is disagreement over when the upgrade should occur.

55 Mr Kyle addresses this matter in his evidence.[68] I agree with his analysis, and my strikethrough version of the conditions requires the Applicant to commission its wastewater treatment plant upgrade such that it achieves the discharge limits contained in condition 5 within 15 years, rather than the five years proposed in Mr Mayhew's s42A report.

Post Upgrade TSS Limits

56 Mr Mayhew's conditions include a post upgrade limit for TSS comprising a 12-month median of 20 g/m^3 and a 95%ile of 40 g/m^3. The limit was erroneously included in Table 10 of the AEE document. Mr Richardson confirms the proposed treatment will not achieve this limit and that the

[68] Mr Kyle, paragraphs 86 – 100.

correct limit is annual median of 40 g/m^3 and 95%ile of 80 g/m^3 which was included in the proposed consent conditions provided in Appendix 1 of the AEE.[69] On the basis of Mr Richardson's evidence, and Dr James' evidence that the latter limit achieves an acceptable ecological outcome, I have included it in my strikethrough version.[70]

Restrictions on Wastewater Volumes

57 Mr Mayhew's conditions include a 'placeholder' within condition 2 to limit the monthly and annual wastewater volumes discharged by the Plant, seemingly to manage the cumulative load of contaminants it discharges into the catchment. Mr Richardson describes why this approach is problematic from an operational perspective.[71] Dr James also addresses this matter confirming that it is TN which requires a limit on contaminant load for ecological reasons, that an total annual load on this parameter is sufficient, and a monthly limit is unnecessary, and that the concentration based limits for other parameters will protect the river in all other aspects.[72] Based on this evidence of Mr Richardson and Dr James, I have not included the monthly and annual limits on discharge volume foreshadowed in Mr Mayhew's condition 2.

Cultural Matters

58 As detailed in the AEE, and in the evidence of Mr Hailes, consultation and engagement with Te Ao Marama and Hokonui Rūnanga commenced early in the consenting planning phase and has continued throughout. Considerable work has been undertaken by the parties on how to address the cultural effects of the activities and implement the various recommendations set out in the CIA documents. This included progressing the MoU referred to by Mr Hailes, Mr Richardson and others, alongside a comprehensive suite of consent conditions targeted at matters raised in

[69] Mr Richardson, paragraph 47.

[70] Condition 5.

[71] Mr Richardson, paragraphs 41 – 44.

[72] Dr James, paragraph 137.

the CIA documents. Development of those conditions occurred in partnership with Hokonui Runanga through an iterative process.

59 In my strikethrough version of the conditions I have included the conditions as they stood when the iterative process stalled following the release of Mr Mayhew's s42A report and its recommendation for a 10 year consent term. They are volunteered by Alliance on the understanding that in the event the Commissioners decide to grant consent for 25 years, they reflect the conditions Hokonui Runanga would be comfortable with to address the various matters raised in the two CIA, alongside a suitable MoU. To assist the Commissioners, I have highlighted the specific conditions in question in grey in my strikethrough version. They include:

a. In recognition of the role of Hokonui Runanga as kaitiaki of the Mataura River, a requirement that:

   i. The various reports Alliance is required to provide Environment Southland over the course of the consent term also be provided to Hokonui Runanga.[73]

   ii. Hokonui Runanga be notified alongside Environment Southland of any *confirmed exceedance* of a limit prescribed in the conditions of consent.[74]

b. A comprehensive suite of conditions requiring Alliance work in partnership with Hokonui Runanga to explore alternative treatment and discharge methods that would enable discharges to the river from the Plant to cease in time. These include:

   i. Conditions 16 - 18 which require Alliance invite Hokonui Rūnunga to enter into partnership for the preparation of a Discharge Method Review within the first two years of the consent term.

[73] These include the Whitewater Recycling Plan in conditions 9 and 10; QMRA in condition 12; FMU review in condition 23, Wastewater Treatment Upgrade Plan in condition 24, bi-annual reporting on the Wastewater Treatment Upgrade Plan in condition 26, the post upgrade review report required by conditions 28 and 29, the EMP required by condition 30, five weekly reporting of routine water quality monitoring results in condition 41, and the Annual Monitoring Report in condition 43.

[74] Condition 42.

Condition 15 also establishes the parameters and objectives for this review process.

ii. Condition 19 which requires the Discharge Method Review process to be repeated at Year 7 and again at Year 20 of the new consent term in the event the first review does not identify a suitable alternative.

iii. Condition 20 which requires the Consent Holder to take immediate steps to progress implementation of any suitable alternative to enable the cessation of discharge within the soonest practicable timeframe.

iv. Changes to conditions 24 and 25 so that the Wastewater Treatment Upgrade Plan accommodates the Discharge Method Review process and would set out the process for implementing any alternative treatment and discharge method identified as suitable by the Review.

c. Inclusion of monitoring that reflects Ngāi Tahu indicators of cultural health in the EMP, and provision for Hokonui Runanga input into the development of the EMP.[75]

d. A requirement that at least one of the experts engaged to review whether the limits set in the consent are appropriate to maintain and enhance water quality and ecological health in the Mataura River FMU pre and post the wastewater treatment plant upgrade, have knowledge in Ngāi Tahu Mātauranga Māori.[76]

e. A comprehensive Kaitiaki Plan[77] to be prepared in partnership with Hokonui Runanga which sits alongside the MoU and guides how various other recommendations in the Aukaha CIA will be implemented over the term of the consent, including but not limited to:

[75] Conditions 31, 32, 33(ii) and 34(vii).
[76] Conditions 23 and 28.
[77] Conditions 44 – 48.

i. The restoration of riparian margins within the Mataura River Mātaitai Reserve, particularly in the vicinity of the Mataura Plant;

ii. The joint management of the trap and transfer programme;

iii. The implementation of a monitoring and reporting programme within the affected reach of the Mataura River that reflects Ngāi Tahu indicators of cultural health;

iv. Research into kanakana populations in the Mataura River in consultation with Hokonui Rūnunga;

v. The improvement of access for Hokonui Rūnunga to Te Au-Nui-Pihapiha-Kanakana; and

vi. The provision of markers of cultural identity within and immediately adjacent to the site of the activities to be undertaken by the Consent Holder.

60 As outlined above, these conditions were drafted on the basis that a formal MoU would also be in place. I have seen a draft of the MoU and it would give life to the Kaitiaki Plan condition in particular, providing considerable direction on how Alliance and Hokonui Runanga would work in partnership towards achieving the various objectives set out in the condition. If the Kaitiaki Plan condition were to be included on any consent granted to Alliance, I accept that it would need to be recast somewhat if no MoU materialized so it is sufficiently certain in its requirements of the consent holder.

SUBMISSIONS

61 In my assessment, submissions by the following parties raise matters directly relevant to conditions:

a. Hokonui Rūnanga – Aukaha;

b. Te Rūnanga O Ngāi Tahu;

c. Fish & Game New Zealand – Southland Region (**Fish & Game**); and

d. Department of Conservation (**DoC**).

62 I address cultural matters in paragraphs 58 – 60 above. I address matters raised by Fish & Game and DoC below.

Fish & Game

63 The key areas of the Fish & Game submission, insofar as they apply to consent conditions and how I have addressed those submission points, is set out in the table below:

Submission point	**Response**
A consent term of 20 years would be more appropriate	I address term in paragraphs 49 – 52 above.
The submitter has reservations around the proposed 15-year timeframe for upgrading the wastewater treatment plant. Expresses concern that it has been determined by reference to financial considerations rather than any ecological / water quality consideration. And proposes a timeframe of 10 years instead.	I address the upgrade timeframe in paragraphs 45 – 48 above. Mr Kyle's evidence[78] explains how both ecological and financial considerations were considered in determining the timeframe.
It supports the UV upgrade and the 5 year upgrade timeframe proposed.	This is retained in condition 14.
It queries why the fish screen upgrade is not required for 2 years.	I address this in paragraph 24(b) above.
It seeks detail on why there are no receiving environment limits proposed for periphyton, total nitrogen (TN), dissolved inorganic nitrogen (DIN), ammoniacal-N, total phosphorus (TP), dissolved reactive phosphorus (DRP), biological oxygen demand (BOD), water clarity, and faecal coliforms.	Dr James[79] explains why receiving environment standards for the parameters raised by Fish & Game are not appropriate. and on the basis of Dr James' evidence. I have not included any.
It seeks visual clarity be monitored downstream of the discharge.	As noted by Dr James, two weekly monitoring of visual clarity has been added to the monitoring programme. This is shown in condition 34(iv) of my strikethrough version.

[78] Mr Kyle, paragraphs 86 - 100.

[79] Dr James, paragraphs 152 – 168.

Submission point	Response
It questions why there are no improvements in TP contribution are proposed over the life of the consent.	Dr James describes why further improvements on TP are unnecessary.[80] I note that there would be an opportunity to review this approach in response to changes to the regional planning framework (including new water quality guidelines, standards or target attribute states) and instream conditions as part of the pre and post upgrade reviews required by conditions 23, 28 and 29.
It questions the DO limit and also whether DO should be measured further downstream than the compliance point.	Dr James addresses this matter.[81]
It suggests a contingency plan should be required, which identifies what land / other facilities Alliance can use for emergency storage of wastewater when the ability to discharge treated wastewater is compromised due to drought and low flow, or issues with the operation of the WWTP	Condition 8 of the process water permit, and condition 40 of the wastewater discharge permit require the consent holder maintain and implement a Low Flow Contingency Plan to minimise the abstraction of water and discharge of wastewater during low flow conditions.
It suggests the existing low flow contingency plan be updated.	Condition 8 on the process water take permit requires this to occur within the first 6 months of the new consent term.
It expresses concern there is no condition providing Council the opportunity to review the consent conditions under s128 of the RMA in response to changes in the planning and policy framework	Conditions 53 and 54 do this.
It seeks conditions which specify a maximum instantaneous, daily and annual rate of take for both cooling and process water, and water metering requirements, including telemetry to report water usage at least once per day to ensure compliance with those conditions.	The conditions require monitoring and reporting of the cooling and process water takes which meet the Water Take Regulations. In the case of cooling water, this does not require telemetry and daily reporting reflecting its non-consumptive nature and that the water is returned to the hydro race in the vicinity of where it is taken. Daily limits are included on both consents. Given the lack of effects of the abstractions discussed in paragraph 20 of my evidence, and Mr Richardson's comments on how the

[80] Dr James, paragraphs 160 – 162.

[81] Dr James, paragraphs 163 – 164.

Submission point	Response
	plant abstracts and uses water, including his comments on how volumes fluctuate month by month depending on processing volumes, I do not see any reason for including additional instantaneous, monthly or annual limits. The situation here is not analogous to irrigation takes, for example, which commonly include monthly limits reflecting changes in irrigation demand through the year.
It notes the instream weir incorporates a fish ladder to facilitate effective upstream Salmonid passage and that it is important that provision continues beyond 2026 when the hydro consents expire.	The operation of the weir beyond 2026 is no longer part of the proposed applications. It will be decided when applications to continue using the weir are considered, following expiration of the existing consents to use the structure on 1 November 2026.

Department of Conservation

64 The key areas of the DoC submission, insofar as they apply to consent conditions and how I have addressed those submission points, is set out in the table below:

Submission point	Response
A consent term of 20 years would be more appropriate.	I address term in paragraphs 45 – 48 above.
The submitter notes the cumulative effects of TN, Amm-N and *E.coli* discharges into Fortrose / Toetoes Estuary have resulted in clear evidence of degradation within the Awarua Wetland RAMSAR site. The submitter supports proposed WWTP upgrades as they will reduce discharge of these parameters. The submitter notes significant improvements will not occur until 2034 and until then the discharge will continue to contribute to degradation.	I address the upgrade timeframe in paragraphs 53 – 55 above.
The submitter supports the UV upgrade.	This is retained in condition 14.

Submission point	Response
The submitter supports the fish screen upgrade.	This is retained in the conditions of the two water permits.
The submitter expresses various concerns with the potential effects of ammonia toxicity effects in the mixing zone, particularly in respect of kanakana.	Dr James addresses these concerns in his evidence.[82] As described by Mr Richardson, Alliance is relatively well progressed in discussions with Hokonui Runanga on how the two parties could work in partnership on matters relating to kanakana, with the intent the work be detailed in the MoU and Kaitiaki Plan required by condition 44 of my strikethrough version. I understand the Department of Conservation is satisfied with that approach.[83]

CONCLUSION

65 A range of consent conditions are proposed in order to avoid, remedy or mitigate the potential effects of the proposed activities. While there will be some adverse effects, the proposed consent conditions are intended to ensure that any potential effects of the activity are mitigated or managed in accordance with recommendations of the various technical assessments, and in a manner that aligns with the outcomes sought by the relevant statutory planning documents where applicable.

66 Overall, it is my opinion that the consent conditions attached as **Attachment 1** to my evidence are robust and provide suitable safeguards for the environment / community, while also providing sufficient flexibility and certainty to the operation of the Mataura Plant, and the important role it fills in this Region.

Adrian Low

16 November 2020

[82] Dr James, paragraphs 171 - 173.

[83] Mr Hailes, paragraph 13.

Attachment 1

My strikethrough version of proposed conditions

environment SOUTHLAND

CONSENT NUMBER

Cnr North Road and Price Street
(Private Bag 90116)
Invercargill

Telephone (03) 211 5115
Fax No. (03) 211 5252
Southland Freephone No. 0800 76 88 45

Pursuant to the Resource Management Act 1991, resource consents arew hereby granted by the Southland Regional Council (the "Council") to **Alliance Group Ltd** (the "consent holder") of **P O Box 1, Mataura** from **[**date of granting**]**.

Please read this Consent carefully, and ensure that any staff or contractors carrying out activities under this Consent on your behalf are aware of all the conditions of the Consent.

Water Permit

Take and Use – Process Water

Details of Permit

Purpose for which permit is granted:		To take water from a water race fed by the Mataura River, for meat processing, truck washing and related uses including cleaning, potable water and processing activities
Location	- site locality	Mataura
	- map reference	At or about NZTM: Easting 1281400, Northing 4876600
	- environmental source	Mataura River
	- catchment	Mataura
Legal description of land at the site:		Mataura River
Expiry date:		[25~~10~~ years after the commencement date]

Schedule of Conditions

1. This consent shall expire on [25~~10~~ years after the commencement date].

(Note: Pursuant to Sections 123 and 124 of the Resource Management Act 1991, a new consent will be required at the expiration of this consent. The application will be considered in accordance with the plans in effect at that time, and the adverse effects of the proposed activity.)

2. This consent authorises the taking of up to 8,000 cubic metres per day of water from a water race fed by the Mataura River. That take shall occur between map reference NZMS 260 F46:913-386 and F46:911-382.

Water Take Metering and Reporting

3. The Consent Holder shall monitor the volume of water taken in each 15 minute interval, including the date taken, and supply an electronic record of the take each day:

   (i) Once daily to the Consent Authority by means of telemetry in a form that is compatible with the Consent Authority's time-series database no later than the end of the next day; and

   (ii) A summary of the take for the previous production season to the Consent Authority by 31 October each year.

   Advice Note: The reported data can be provided in aggregated form that is the sum of all metered takes under this resource consent

4. The Consent Holder shall maintain:

   (iii) a water meter at the locations shown in Map A to record the water taken, within an error accuracy range of +/-5% over the meter's nominal flow range,

   (iv) a datalogger with at least 12 months data storage capacity to record daily water use

   (v) a telemetry unit to report the water take at least once per day

   (vi) record the rate and volume of take and the date and time this water was taken.

5. Each water meter shall be maintained in a location with straight length of pipe either side of the water meter.

   (vii) On the upstream side there shall be a length of straight pipe that is 10 times the diameter of the pipe, and on the downstream side there shall be a length of straight pipe that is 5 times the diameter of the pipe.

   (viii) The meter location shall be easily accessible, and, within the distances specified in (i), the straight length of pipe shall have no fittings and obstructions in it.

6. Each water meter shall be verified for accuracy within the first year of its operation, and thereafter once every five years.

   (ix) Each verification shall be undertaken by a Consent Authority approved operator.

   (x) A Water Measuring Device Verification Form shall be completed and supplied to the Consent Authority with receipts of service within five working days of the verification.

7. The Consent Holder shall ensure the full operation of the water meters and datalogger at all times during the exercise of this consent. All malfunctions of the water meters and/or datalogger during the exercise of this consent shall be reported to the Consent Authority within five working days of observation and appropriate repairs shall be performed within five working days. Once the malfunction has been remedied, a Water Measuring Device Verification Form completed with photographic evidence must be submitted to the Consent Authority within five working days of the completion of repairs.

Low Flow Contingency Plan

8. Within six months of the commencement of this consent, the Consent Holder shall update its Low Flow Contingency Plan (included as Attachment 1) to this consent, to minimise the abstraction of water under [insert reference to this consent] and discharge of wastewater under [insert reference to wastewater consent] during times when the flow of the Mataura River at the Tuturau recording site is less than 20 cubic metres per second. The Low Flow Contingency Plan shall be updated to:

   (i) Reflect the abstraction volumes and conditions of this consent, including any water efficiency measures resulting from the whitewater recycling project ~~review~~ identified in the associated wastewater discharge consent [number];

   (ii) Include such actions as necessary to ensure that at all times the take does not cause the flow of water over the weir to reduce below a level of 0.05 metres of water passing over the centre of the weir;

   (iii) Ensures water use is reduced to that necessary for the functioning of the Plant, including to meet hygiene and export requirements;

   (iv) Require an independent audit of water saving measures being undertaken at the Plant in the event the flow of the Mataura River at the Tuturau recording site is less than 10 cubic metres per second.

Intake Screens

9. Within [two ~~one~~] year of the commencement of this consent, the Consent Holder shall ensure that all intake structures operated in accordance with this consent are fitted with a ~~2 – 3mm~~ screen mesh of 2 – 3 mm or less and that screen is maintained in good working order throughout the remaining life of this consent.

Charges

10. Charges, set in accordance with section 36(1) of the Resource Management Act 1991, shall be paid by the consent holder to the Southland Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Resource Management Act 1991.

Review

11. The Council may serve notice in accordance with Section 128 and 129 of the Act, during the month of December 2021, and in the month of December each year thereafter, of its intention to review the conditions of this consent for the purposes of:

   (xi) Amending the metering and reporting conditions to ensure that they continue to provide accurate and relevant information on the water take;

   (xii) Addressing any unanticipated adverse effect on the environment which may arise from the exercise of the consent; or

   (xiii) Complying with the requirements of a future Regional Plan, including a plan change to an existing regional plan.

Water Permit

Take and Use – Cooling Water

Details of Permit

Purpose for which permit is granted:		To take water from a water race fed by the Mataura River, for engine room cooling water and engine room condenser water
Location	- site locality	Mataura
	- map reference	At or about NZTM: Easting 1281400, Northing 4876600
	- environmental source	Mataura River
	- catchment	Mataura
Legal description of land at the site:		Mataura River
Expiry date:		[25 ~~10~~ years from the commencement date]

Schedule of Conditions

1. This consent shall expire on [25 ~~10~~ years from the commencement date].

   (Note: Pursuant to Sections 123 and 124 of the Resource Management Act 1991, a new consent will be required at the expiration of this consent. The application will be considered in accordance with the plans in effect at that time, and the adverse effects of the proposed activity.)

2. This consent authorises the taking of up to 21,200 cubic metres per day of water from a water race fed by the Mataura River. That take shall occur between map reference NZMS 260 F46:913-386 and F46:911-382.

2A. The activities authorised by this consent shall be undertaken in general accordance with the information contained in the Assessment of Environmental Effects (31 May 2019) and supporting technical documents submitted by Alliance Group Limited to Southland Regional Council in support of its resource consent applications and as amended by the conditions below.

Water Take Monitoring and Reporting

3. The Consent Holder shall monitor the volume of water taken each day and supply an electronic record of the daily take for the previous production season to the Council by 31 October each year.

   Advice Note: An acceptable method of monitoring the volume of water taken each day is by combining the records of pump capacities and pump operation. The reported data can be provided in aggregated form that is the sum of all takes under this resource consent.

Intake Screens

4. Within [two ~~one~~] years of the commencement of this consent, the Consent Holder shall ensure that all intake structures operated in accordance with this consent are fitted with a ~~2 – 3mm~~ screen mesh of 2 – 3 mm or less and that screen is maintained in good working order throughout the remaining life of this consent.

Charges

5. Charges, set in accordance with section 36(1) of the Resource Management Act 1991, shall be paid by the consent holder to the Southland Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Resource Management Act 1991.

Review

6. The Council may serve notice in accordance with Section 128 and 129 of the Act, during the month of December 2021, and in the month of December each year thereafter, of its intention to review the conditions of this consent for the purposes of:

   (i) Amending the monitoring and reporting conditions to ensure that they continue to provide accurate and relevant information on the water take;

   (ii) Addressing any unanticipated adverse effect on the environment which may arise from the exercise of the consent; or

   (iii) Complying with the requirements of a future Regional Plan, including a plan change to an existing regional plan.

Discharge Permit

Discharge – Cooling Water

Details of Permit

Purpose for which permit is granted:		To discharge cooling and consenser water to the Mataura River.
Location	- site locality	Mataura
	- map reference	At or about NZTM: Easting 1281400, Northing 4876600
	- environmental source	Mataura River
	- catchment	Mataura
Legal description of land at the site:		Mataura River
Expiry date:		[25 ~~10~~ years from the commencement date]

Schedule of Conditions

1. This consent shall expire on [25 ~~10~~ years from the commencement date].

   (Note: Pursuant to Sections 123 and 124 of the Resource Management Act 1991, a new consent will be required at the expiration of this consent. The application will be considered in accordance with the plans in effect at that time, and the adverse effects of the proposed activity.)

2. This consent authorises the taking of up to 21,200 cubic metres per day of water from a water race fed by the Mataura River. That take shall occur between map reference NZMS 260 F46:913-386 and F46:911-382.

2A. The activities authorised by this consent shall be undertaken in general accordance with the information contained in the Assessment of Environmental Effects (31 May 2019) and supporting technical documents submitted by Alliance Group Limited to Southland Regional Council in support of its resource consent applications and as amended by the conditions below.

Monitoring

3. The Consent Holder shall measure the temperature and the oxygen content of the water in the water race upstream and downstream of the point of discharge once per week when the flow of the Mataura River at Tuturau monitoring site is less than 40 cubic metres per second. Downstream monitoring is to be undertaken no further downstream than the Mataura Bridge.

4. The Consent Holder shall report the results of weekly temperature and dissolved oxygen (DO) monitoring for the previous production season to the Council by 31 October each year.

Receiving Environment Standards

5. The discharge shall not directly result in any of the following below the zone of reasonable mixing (unless otherwise specified below), defined as 250 m downstream of the wastewater outfall:

(i) The daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

(ii) The pH of the water must be within the range 6 to 9, except when due to natural causes.

(iii) The waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours.

(iv) There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing.

(v) There must not be any destruction of natural aquatic life by reason of a concentration of toxic substances.

(vi) The natural colour and clarity of the waters must not be changed to a conspicuous extent.

(vii) The oxygen concentration in solution in the waters must not be reduced below 5 milligrams per litre.

Charges

6. Charges, set in accordance with section 36(1) of the Resource Management Act 1991, shall be paid by the consent holder to the Southland Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Resource Management Act 1991.

Review

7. The Council may serve notice in accordance with Section 128 and 129 of the Act, during the month of December 2021, and in the month of December each year thereafter, of its intention to review the conditions of this consent for the purposes of:

(viii) Amending the monitoring conditions to ensure that they continue to provide accurate and relevant information on the effects of the discharge

(ix) Addressing any unanticipated adverse effect on the environment which may arise from the exercise of the consent; or

(x) Complying with the requirements of a future Regional Plan, including a plan change to an existing regional plan.

Discharge Permit

Discharge – Process Wastewater

Details of Permit

Purpose for which permit is granted:		To discharge treated meatworks and process wastewater to water
Location	- site locality	Mataura
	- map reference	At or about NZTM: Easting 1281400, Northing 4876600
	- receiving environment	Mataura River
	- catchment	Mataura
Legal description of land at the site:		Lot 1 DP 12500 and Lots 1 and 2 DP 12431
Expiry date:		[25~~10~~ years from the commencement date]

Schedule of Conditions

1. This consent shall expire on [25~~10~~ years from the commencement date].

   (Note: Pursuant to Sections 123 and 124 of the Resource Management Act 1991, a new consent will be required at the expiration of this consent. The application will be considered in accordance with the plans in effect at that time, and the adverse effects of the proposed activity).

2. This resource consent authorises the discharge of up to 8,000m^3/day of treated wastewater from a meat processing plant into the Mataura River at the location specified above. ~~and no more than~~
   ~~i. XXXX m^3/month (maximum and median)~~
   ~~ii. XXXXXXX m^3/year~~

Discharge Standards

3. Unless otherwise authorised by a Whitewater Recycling Plan certified by the Consent Authority in accordance with condition 9 or 10 of this consent the following limits apply to the treated wastewater prior to its discharge into the Mataura River, until superseded by the limits in Condition 5 below:

Parameter	Limit
Ammoniacal Nitrogen	Shall not exceed a maximum of 50 g/m^3 and consistently maintained at less than 30 g/m^3
cBOD5 Load	Shall not exceed a maximum of 3,500 kg/day
cBOD5	Shall not exceed a maximum of 300 g/m^3
Dissolved Reactive	Shall not exceed a 12 month rolling median of 0.5 g/m^3 and

Phosphorus	95th %ile of 1.5 g/m³ ~~The total load of dissolved reactive phosphorus discharged to the river shall not exceed 14.4 kg/day~~
Total Suspended Solids	Shall not exceed a maximum of 200g/m³ and consistently maintained at less than 100 g/m³
Dissolved Inorganic Nitrogen	Shall not exceed a 12 month rolling median of 40 g/m³ and 95th %ile of 60~~4~~ g/m³
Total Kjeldahl nitrogen	Shall not exceed a 12 month rolling median of 60 g/m³ and 95th %ile of 80 g/m³
Total Phosphorous	Shall not exceed a 12 month rolling median of 5~~.5~~ g/m³ 95th%ile of 10 g/m³
Total Nitrogen	The annual load of total nitrogen measured in the discharge between 1 October and 30 September shall not exceed 60 tonnes
	The load of total nitrogen shall not exceed 780 ~~260~~ tonnes (*Advice note: This is equivalent to an average of 52 tonnes per year over the 15 year period before the wastewater treatment plant upgrade is required*)
The limits for Ammoniacal Nitrogen and Total Suspended Solids shall be "consistently maintained" if not less than four results out of each set of five meet the lesser specified value, when a set of five results is obtained in accordance with the EMP.	

4. The following additional limit applies (in addition to those in Condition 3 above) after the commissioning of Wastewater Disinfection in accordance with conditions 13 or 14:

Parameter	**Limit**
E.coli	Shall not exceed an annual median of 1,000 colony forming units (cfu) per 100 ml and 95th percentile of 10,000 cfu/100mL

Advice note: This limit applies until superseded by the E.coli limit in condition 5 below

5. The following limits apply to the treated wastewater prior to its discharge into the Mataura River, after the commissioning of the Wastewater Treatment Plant Upgrade:

Parameter	**Limit**
Ammoniacal Nitrogen	Shall not exceed a rolling 12 month median of 5 g/m³ and 95th percentile of 10 g/m³
~~cBOD5 Load~~	~~Shall not exceed a maximum of 3,500 kg/day~~
cBOD5	Shall not exceed a rolling 12 month median of 50 g/m³ and 95th percentile of 100 g/m³
Dissolved Reactive Phosphorus	Shall not exceed a 12 month rolling median of 0.5 g/m³ and 95th %ile of 1.5 g/m³ T~~he total load of dissolved reactive phosphorus discharged~~

	~~to the river shall not exceed 14.4 kg/day~~
Total Suspended Solids	Shall not exceed a rolling 12 month median of 40 ~~20~~ g/m³ and 95th percentile of 80 ~~40~~ g/m³
Dissolved Inorganic Nitrogen	Shall not exceed a rolling 12 month median of 20 g/m³ and 95th percentile of 35 g/m³
Total Nitrogen	Shall not exceed a rolling 12 month median of 20 g/m³ and 95th percentile of 40 g/m³
	From 12 months after commissioning, the annual (1 October to 30 September) Total Nitrogen load does not exceed 25 tonnes.
Total Phosphorous	Shall not exceed a rolling 12 month median of 5 g/m³ and 95th percentile of 10 g/m³
E. coli	95th percentile of 1,000 cfu/100 ml

6. In the event one or more of the limits set out in condition 3, 4, 5 or 6 above is exceeded, the Consent Holder shall resample and/or retest that parameter as soon as practicable. In circumstances where one or more of the limits set out above are exceeded on two consecutive sampling occasions and these results are *confirmed exceedances*, the Consent Holder shall report to the Consent Authority in accordance with Condition 42 ~~23~~.

Instream Limits

7. Notwithstanding the limits specified above, the discharge shall not directly result in any of the following below the zone of reasonable mixing (unless otherwise specified below), defined as 250 m downstream of the wastewater outfall:

   (i) The daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

   (ii) The pH of the water must be within the range 6 to 9, except when due to natural causes.

   (iii) The waters must not be tainted so as to make them unpalatable, nor must they contain toxic substances to the extent that they are unsafe for consumption by humans or farm animals, nor must they emit objectionable odours.

   (iv) There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing.

   (v) There must not be any destruction of natural aquatic life by reason of a concentration of toxic substances.

   (vi) The natural colour and clarity of the waters must not be changed to a conspicuous extent.

   (vii) The oxygen concentration in solution in the waters must not be reduced below 5 milligrams per litre.

Resilience Issues ~~and Water Saving Strategy~~

8. Within 12 months of the commencement of this consent the Consent Holder shall take all practicable measures to:

   (i) Re-route all pipework that runs above, or in, the water race to a location that prevents the risk of waste leaking into the water race or fresh water leaking into the treatment system;

   (ii) Re-route all pipework that runs above the river to a location that prevents the risk of waste leaking into the river;

   (ii) Modify the beef sump milli-screen overflow to prevent green waste overflows into the non-green waste stream; and

   (iv) Modify the stockyard and tripe recycle area to prevent green waste overflows into the non-green waste stream.

Whitewater Recycling

9. Within six months of the commencement of this consent the Consent Holder shall prepare and submit to the Consent Authority for certification a Whitewater Recycling Plan which:

   (i) Describes how the wastewater treatment plant will be upgraded to include recycling of white water in a manner which:

      a. Does not increase the total contaminant load within the discharge when measured on a daily basis relative to that authorised by the limits in Condition 3; and

      b. Does not give rise to adverse toxicity and eutrophication effects on aquatic organisms within the mixing zone and downstream.

      This Plan shall include:

      c. A description of the proposed technology and wastewater plant upgrades to be installed;

      d. A description of the methodology of how the wastewater plant upgrades will be installed;

      e. A description of any trial work which is necessary to confirm the effectiveness of whitewater recycling at the site and how it impacts on wastewater concentrations and volumes, and how this trial work will be undertaken to ensure instream values are protected;

      f Procedures for advanced notification of the Consent Authority and Hokonui Rūnunga Environmental Department of any trial work; and

      g. Any revisions to the concentration limits listed in condition 3 which are needed to enable the operation of the wastewater treatment plant white water recycling while achieving the outcomes required by (a) and (b).

      The report shall include a review by a suitably qualified and experienced ecologist which confirms that the outcomes required by (a), (b), (e) and (g) would be achieved.

   OR

   (ii) Describes why it is not practicable to design and implement recycling of white water at the wastewater treatment plant in a manner which meets the outcomes set out in condition 9(i)(a) and (b) above.

A copy of the document shall also be submitted to Hokonui Rūnunga Attn: Environmental Department.

8. ~~Within six months of the commencement of this consent, the Consent Holder shall prepare and submit to the Consent Authority a Resilience and Water Saving Strategy. The purpose of the Strategy shall be to identify:~~

~~(i) measures to avoid potential intermittent cross contamination points between the Green and Non-Green waste streams and potential failure points within the reticulation system; and~~

~~(ii) methods to enable the recycling of white water within the wastewater treatment plant to reduce the total volume of wastewater discharged to the Mataura River to the extent that can be reasonably achieved:~~

~~- without increasing the total contaminant load within the discharge when measured on a daily basis when assessed against the limits in Condition 3 2; and~~

~~- without giving rise to adverse toxicity and eutrophication effects on aquatic organisms within the mixing zone and downstream.~~

~~This Strategy shall include:~~

~~(v) The new contaminant concentration limits to be applied to meet this obligation (acknowledging that the volume of the discharge is reduced meaning that the proportion of contaminant load to discharged volume will be higher within the discharged waste stream); and~~

~~(iv) A review by a suitably qualified and experienced ecologist which assesses the effects of the discharge in order to confirm that the newly set contaminant limits for the discharge will not give rise to unforeseen adverse toxicity and eutrophication effects on aquatic organisms within the mixing zone and downstream; and~~

10. The Consent Holder shall implement any Whitewater Recycling Plan within three years of the commencement of this consent. ~~the Consent Holder shall implement the measures described in the Resilience and Water Saving Strategy.~~ Once ~~implemented and~~ trialling of the new system is complete, the consent holder commission and submit to the Consent Authority for certification a report ~~shall commission a review~~ by a suitably qualified and experienced ecologist which ~~to assess the effects of the discharge in order to~~:

(i) Identifies any changes to the revised concentration limits contained in the certified Whitewater Recycling Plan to address matters arising during the trial; and

(ii) Confirms that the newly set contaminant limits within the discharge (including any amendments required under condition 10(i)) would be met, and that they are not giving rise to unforeseen adverse toxicity and eutrophication effects on aquatic organisms within the mixing zone and downstream.

Apart from when undertaking trial work in accordance with a certified Wastewater Recycling Plan, the Consent Holder must continue to comply with the discharge limits in condition 3 until the Consent Authority has certified the report provided under this condition.

A copy of the report shall be provided to the Consent Authority for certification within 3 months of the new system being commissioned.

Wastewater Disinfection

11 The Consent Holder shall collect representative monthly samples of the discharge water for pathogen monitoring for the first 12 months following commencement of this consent.

12. Within 15 months of the commencement of this consent the Consent Holder shall submit to the Consent Authority a Quantitative Microbial Risk Assessment (QMRA) which uses the monitoring results collected in accordance with condition 11 to evaluate risk to swimmers (both adults and children) in the Mataura River (at the Bridge). The QMRA shall use the same methodology contained in *Dada, A.C (2018) Quantitative Microbial Risk Assessment for the discharge of treated meat processing factory wastewater into the Mataura River. Report AES1704, Streamlined Environmental, Hamilton.* A copy of the document shall also be submitted to Hokonui Rūnunga Attn: Environmental Department

13. If the QMRA submitted in accordance with condition 12 identifies the individual illness risk levels attributable to the discharge are not below the acceptable "no observable effects" threshold of 1% for all zoonotic pathogens, the Consent Holder shall take immediate steps to install equipment to disinfect the process water discharged from the site in order to inactivate pathogens and it shall be commissioned no later than 27 months following the commencement of this consent.

14. Unless otherwise required by condition 13, ~~W~~within [five ~~one~~] years of the commencement of this consent the Consent Holder shall install equipment to disinfect the process wastewater discharged from the site in order to inactivate pathogens.

15. Following installation and commissioning of the disinfection equipment in accordance with conditions 13 or 14 the discharged wastewater shall meet the *E.coli* standards in Condition 4 until superseded by the Wastewater Treatment Plant Upgrade.

Discharge Method Review

16. In recognition of the relationship that Ngāi Tahu and Hokonui Rūnanga have with the waters of the Mataura River and Te Au-Nui-Pihapiha-Kanakana, the cultural significance of these, and the Hokonui Rūnanga preference for the plant's direct discharge to the Mataura River to cease as soon as possible due to the adverse cultural effects of the activity, the Consent Holder shall, within two years of the commencement of this consent, invite Hokonui Rūnunga to enter into partnership for the preparation of a Discharge Method Review.

Once complete, a copy of the Discharge Method Review shall be provided to the Consent Authority, Attention: RMA Compliance and Enforcement Manager (or their equivalent).

The Discharge Method Review shall be prepared by an independent and appropriately qualified professional, and shall identify alternative treatment and discharge methods for the plant's wastewater which were not assessed in the report entitled Alliance Mataura Plant Wastewater Treatment and Disposal Alternatives Assessment dated May 2019 which was included as Appendix 7 of the Alliance Mataura AEE. The Review shall be accompanied by an assessment from a person appropriately qualified in Ngāi Tahu Mātauranga Māori to assess the extent to which the Discharge Method Review appropriately addresses cultural factors and outcomes and is not a technical engineering review only. The objective of the Review is to identify a wastewater treatment and discharge method or methods which would:

(i) Avoid a direct discharge of wastewater to the Mataura River; and:

(ii) Achieve criteria and outcomes prescribed by Hokonui Rūnunga; and

(iii) Be technologically sound; and

(iv) Not give rise to other significant adverse environmental issues which means:

- resource consent can be obtained for the option; and / or
- it would not have a greater adverse effect on water quality in the Mataura River and Toetoes Estuary than upgrading the wastewater treatment plant to achieve the consent limits contained in condition 5 of this consent; and

(v) Not incur greater financial costs (capital + operational) than Option 1C in the *Alliance Mataura Plant Wastewater Treatment and Disposal Alternatives Assessment dated May 2019* which was included as Appendix 7 of the Alliance Mataura AEE, unless otherwise agreed by the Consent Holder; and

(vi) Be achieved within timeframes acceptable to Hokonui Rūnunga and the Consent Holder.

17. The Consent Holder shall submit a draft of the Discharge Method Review to Hokonui Rūnunga for comment at least 40 working days prior to its submission to the Consent Authority.

18. The Consent Holder shall provide any feedback received from Hokonui Rūnunga on the Draft Discharge Method Review to the Consent Authority at the time it is submitted, along with a clear explanation of where any comment has or has not been incorporated into the report and the reasons why. A copy of this report shall be provided to Hokonui Rūnanga Attn: Environmental Department within 5 days of being provided to the Consent Authority.

19. If the Discharge Method Review does not identify an alternative treatment and discharge option which meets all the criteria set out in condition 16 (i) – (vi) another review shall be commissioned in order to repeat the process described in conditions 16 – 18. The first such review shall commence within 7 years of the commencement of this consent, and if necessary, again within 20 years of the commencement of this consent.

20. If the Discharge Method Review identifies an alternative treatment and discharge option which meets all the criteria set out in condition 16 (i) – (vi) the Consent Holder shall take immediate steps to progress implementation of the alternative to enable the cessation of discharge within the soonest practicable timeframe but having regard to the timeframes for upgrading its wastewater treatment plant in conditions 14 and 27. Details of the programme for implementing the alternative option shall be provided in the Wastewater Treatment Upgrade Plan required by condition 24.

21. In the event that that actions required by condition 20 are implemented such that this consent is no longer required, then the consent holder shall surrender this consent to the extent that the activities it authorises are no longer required to be undertaken.

22. If Hokonui Rūnunga advise in writing that they do not wish to participate with the Consent Holder in the preparation the Discharge Method Review, the Consent Holder shall not be required to meet the requirements of conditions 16 to 21 above that require input from Hokonui Rūnanga.

FMU Review

23. Within 6 months of any changes to the relevant Regional Plan which are intended to give effect to the National Policy Statement for Freshwater Management 2020 and which set water quality limits for the Mataura Freshwater Management Unit being made operative, the Consent Holder shall engage an appropriately qualified and independent expert(s) to review the discharge limits in condition 3, 4, 5 and 7 to determine if they remain consistent with the requirements of the relevant Regional Plan, including the date from which the more stringent discharge limits in condition 5 are to apply. At least one of the experts shall have knowledge in Ngāi Tahu Mātauranga Māori.

    The purpose of this review shall be to determine whether it is necessary to impose new limits to be consistent with the requirements of the relevant Regional Plan. This shall include:

    (i) An evaluation of the monitoring undertaken in accordance with conditions 30 – 35 and reported in accordance with conditions 41 - 43;

    (ii) A review of whether the discharge meets or will meet the relevant water quality guidelines or standards included within the relevant Regional Plan including any future target attribute states; and

    (iii) Current and expected progress in the Mataura Freshwater Management Unit towards maintaining and improving water quality to achieve the relevant water quality limits.

    A copy of this review shall be provided to the Consent Authority, Attention: RMA Compliance and Enforcement Manager (or their equivalent). The Consent Holder's obligations to undertake this review and the associated reporting process shall be completed within six months after being initiated (i.e. it must be completed within 12 months of any changes to the relevant Regional Plan becoming operative).

    If this review recommends that amendments to the compliance limits set by this consent are necessary, then the Consent Authority may initiate a formal review of the post upgrade limits for these parameters in accordance with condition 54.

    A copy of the review shall also be submitted to Hokonui Rūnanga Attn: The Environmental Department.

Wastewater Treatment Plant Upgrade

24. ~~Within [one] year of the commencement of this consent the~~ The Consent Holder shall prepare and submit to the Consent Authority a Wastewater Treatment Upgrade Plan. A copy of the document shall also be submitted to Hokonui Rūnunga Attn: Environmental Department.

    The plan shall be submitted within 12 months of the completion of the first Discharge Method Review if it identifies an option the Consent Holder is required to implement by condition 20, or otherwise within 12 months of the second Discharge Method review being completed.

    This plan shall identify the technology and wastewater treatment plant upgrades necessary to improve the quality of the wastewater discharged to the Mataura River in order to meet the standards and limits specified in Condition 5 or to implement the alternative treatment and discharge option the Consent Holder is required to implement by condition 20.

Advice Note: At the time consent was issued it was expected any changes to the relevant Regional Plan which are intended to give effect to the National Policy Statement for Freshwater Management 2020 would be operative by 31 December 2026. It was therefore expected the findings of the condition 23 report and any implications for this consent would be known when the Wastewater Treatment Upgrade Plan is being prepared.

25. The Wastewater Treatment Upgrade Plan shall include, but not be limited to, the following matters:

    (i) A description of the proposed technology and wastewater plant upgrades to be installed;

    (ii) A description of the methodology of how the wastewater plant upgrades will be installed and a staged work plan describing the timing associated with the progressive implementation of these works;

    (iii) If a land-based discharge is proposed, a description of the proposed disposal locations and methodology, and a staged work plan describing the timing associated with the progressive implementation of those works;

    (iv) Any additional resource consents and / or changes to the conditions of this resource consent required; and

    (v) The monitoring and reporting obligations associated with the wastewater treatment plant upgrades.

26. Following the submission of the Wastewater Treatment Upgrade Plan, the Consent Holder shall report to the Consent Authority on a bi-annual basis on its progress towards implementation and commissioning of the wastewater treatment plant upgrade. This reporting shall describe any interim measures undertaken to improve the quality of the discharge, or physical plant works or operational changes associated with the upgrade.

    A copy of the bi-annual reporting document shall also be submitted to Hokonui Rūnunga Attn: Environmental Department.

27. The Consent Holder shall ensure that the Wastewater Treatment Plant Upgrade prescribed in the Wastewater Treatment Upgrade Plan is fully commissioned and operational no later than [15 ~~five~~] years from the commencement of this consent.

28. Within six months after the Wastewater Treatment Plant Upgrade has been commissioned and has been fully operational for twelve months, the Consent Holder shall engage an appropriately qualified and independent expert(s) to review the effect of the upgraded discharge on water quality in the Mataura River. At least one of the experts shall have knowledge in Ngāi Tahu Mātauranga Māori. The purpose of this review shall be to determine whether the anticipated water quality improvements have been achieved, and whether the limits set in Condition 5 are appropriate to maintain and enhance water quality and ecological health in the Mataura River. The review shall include:

    (i) An assessment of the improvement in water quality in the river following the upgrade;

    (ii) An evaluation of the monitoring results with regard to the limits in Condition 5 and Ngāi Tahu indicators of health;

    (iii) A review of relevant guidelines or standards for these parameters applicable at the date of the review, including any limits in the relevant planning documents, and other catchment wide improvements relating to water quality.

29. A copy of this review shall be provided to the Consent Authority, who may then trigger a review of the discharge limits in accordance with Condition 53 ~~31~~. A copy of the review shall also be submitted to Hokonui Rūnanga Attn: Environmental Department.

~~**Further Investigation Programme**~~

~~2. [Placeholder for a condition(s) requiring further consideration of land based and other treatment options]~~

Environmental Monitoring Plan

30. No later than six months from this consent commencing the Consent Holder shall prepare and submit to the Consent Authority an Environmental Monitoring Plan (EMP) for certification. A copy of the document shall also be submitted to Hokonui Rūnunga Attn: Environmental Department.

    The purpose of the EMP is to describe the methods for monitoring the physical characteristics and water quality parameters of the discharge, and the physical, water quality and biological characteristics and parameters of the Mataura River receiving waters as prescribed by this consent. The objectives of the EMP are to:

    (i) Confirm compliance with consent limits on discharge quality;

    (ii) Understand the effects of the discharge on Mataura River water quality and confirm no unexpected effects are arising as a result of the exercise of this consent.

31. The Consent Holder shall submit a draft of the EMP to Hokonui Rūnunga for comment at least 40 days prior to submitting it to the Consent Authority for certification.

32. The Consent Holder shall provide any feedback received from Hokonui Rūnunga on the Draft EMP to the Consent Authority at the time it is submitted for certification, along with a clear explanation of where any comment has or has not been incorporated into the EMP and the reasons why

33. The EMP shall include but not be limited to:

    (i) The inclusion of a description and maps identifying the monitoring sites;

    (ii) A description of the methods and appropriate timing for undertaking the following monitoring requirements:

    - Discharge wastewater monitoring
    - Receiving water quality monitoring
    - Ecological instream monitoring
    - Fish health monitoring, ~~including kanakana populations in the vicinity of the site~~
    - Monitoring that reflects Ngāi Tahu indicators of cultural health ~~Cultural monitoring indicators~~

    (i) The reporting requirements associated with any monitoring undertaken in accordance with these conditions.

    (ii) Response to any non-compliance with discharge standards.

34. The EMP, as a minimum, shall provide for the following monitoring requirements:

(i) maintenance of records of the times and volumes of treated wastewater discharged on each day the permit is exercised;

(ii) representative weekly samples of the treated wastewater at the point of discharge for the following parameters:

Parameter
Enumerate E.coli
Temperature
pH
Total Kjeldahl nitrogen
Ammoniacal nitrogen
Dissolved inorganic nitrogen
Total nitrogen
Total suspended solids
Total phosphorous
Dissolved reactive phosphorous
Carbonaceous BOD5

(iii) representative weekly samples of receiving water quality both upstream and downstream of the point of discharge while a discharge is occurring for the following parameters:

Parameter
Enumerate E.coli
Temperature
pH
Dissolved oxygen concentration and saturation
Nitrate - nitrite nitrogen
Total Kjeldahl nitrogen
Ammoniacal nitrogen
Dissolved inorganic nitrogen
Total nitrogen
Total suspended solids
Total phosphorous

Dissolved reactive phosphorous
Carbonaceous BOD5

(iv) Representative fortnightly samples between November and April when river flows are below 30 cubic metres per second and while a discharge is occurring for the following parameters:

Black disc
Total suspended solids
Turbidity
Colour

(v) ecological monitoring to understand the effects of the discharge including by monitoring the periphyton and benthic invertebrate communities of the Mataura River at points above and below the point of the discharge.

(vi) a fish health monitoring survey.

(vii) A visual assessment of the presence of bacterial or fungal slime growths within and downstream of the zone of reasonable mixing.

(viii) Cultural monitoring in respect of the Ngāi Tahu indicators of cultural health to be ~~indicators,~~ developed in conjunction with Hokonui Rūnanga.

35. The monitoring of the discharge and receiving environment shall be undertaken at the locations and frequencies specified in the EMP. All monitoring shall be undertaken using methods and standards agreed with the Consent Authority (as outlined in the EMP) and all water samples shall be collected using laboratory supplied containers.

36. The EMP shall be reviewed by the Consent Holder at five yearly intervals. The purpose of this review shall be to confirm that it accurately reflects current on-site activities and operations and to identify if changes to procedures contained within the EMP are required. ~~The~~ A written report detailing the results of the review shall be submitted ~~reported~~ to the Consent Authority within 30 working days of the review being undertaken. If the review results in amendments to the EMP, the amended sections shall be provided to the Consent Authority for certification at this time.

A copy of the review report and amended EMP shall also be submitted to Hokonui Rūnunga Attn: Environmental Department.

37. The Consent Holder shall submit a draft of the review report required by condition 36 and any amended sections of the EMP to Hokonui Rūnunga for comment at least 40 days prior to submitting it to the Council for certification.

38. The Consent Holder shall provide any feedback received from Hokonui Rūnunga on the review report and amended EMP provisions to the Consent Authority at the time they is submitted, along with a clear explanation of where any comment suggesting changes to the EMP has or has not been incorporated and the reasons why

Contingency Plan

39. The Consent Holder shall maintain a contingency plan to be activated in the event of a discharge of raw or partially treated wastewater from any part of the reticulation system to the Mataura River. The plan shall include notification of the Council's Director of Environmental Management ~~and~~ the Area Manager Murihiku (DoC) and Hokonui Rūnunga Attn: Environmental Department without undue delay. If the discharge is likely to contain high pathogen levels from stockyard/gut processing effluent the consent holder shall also notify without undue delay the Medical Officer of Health (or the Health Protection Officer) and Te Ao Marama. A copy of this plan is to be provided to the Consent Authority within six months of the commencement of the consent.

40. The Consent Holder shall maintain and implement the Low Flow Contingency Plan required by condition 8 of [insert process water take permit number]. ~~a contingency plan for the avoidance, remedy or mitigation of adverse effects on the river during extreme low-flow events (river flows of less than 10 cumecs, as recorded in the Mataura River at Environment Southland's Tuturau monitoring site). A copy of this plan is to be provided to the Consent Authority within six months of the commencement of the consent.~~

Reporting

41. The results of the sample analysis for each successive five week period shall be provided to the Consent Authority and Hokonui Rūnanga Attention: Environmental Department, within two weeks of the receiving the all of the laboratory results for that period, unless otherwise agreed with the Consent Authority.

42. The Consent Authority and Hokonui Rūnanga Attention: Environmental Department, shall be notified within 24 hours of any *confirmed exceedance* of a limit prescribed by the conditions of this consent. This notification shall include advice of any corrective actions taken by the Consent Holder. An incident report shall be provided to the Consent Authority and Hokonui Rūnanga Attention: Environmental Department, within twenty working days of the notification of the exceedance. This report shall include:

    (iii) Identification of the likely cause of the limit exceedance;

    (iv) The resulting effects on the receiving environment likely to arise because of the limit exceedance;

    (v) The management responses undertaken or which may be necessary to prevent any further limit exceedances occurring;

    (vi) Remedial action undertaken or which may be necessary.

43. The Consent Holder shall prepare and submit an Annual Monitoring Report to the Consent Authority. The report shall cover the 1 October to 30 September period and shall be provided to the Consent Authority by 30 November each year. The annual report shall include, but not be limited to the following information:

    (vii) presentation and summary of all wastewater and receiving water monitoring results and biological monitoring as required by this consent, including any recommendations for improved monitoring

    (viii) the identification of any recorded non-compliances with consent standards and the measures taken to ensure compliance is achieved.

    (ix) assessment of the effects of the discharge on river water quality and periphyton and benthic invertebrate communities.

(x) Report on progress towards implementing conditions 8, 9 and 10, and the Discharge Method Review required by conditions 16 – 22.

A copy of the Annual Monitoring Report shall also be submitted to Hokonui Rūnunga Attn: Environmental Department.

Kaitiaki Plan

44. Within 6 months of the date on which this consent is granted, the consent holder shall commence preparation of a Kaitiaki Plan in partnership with Hokonui Rūnanga. Once complete, but no later than 18 months after the consent is granted, a copy of the Kaitiaki Plan shall be provided to the Consent Authority, Attention: RMA Compliance and Enforcement Manager (or their equivalent). The objectives of the Kaitiaki Plan shall be to guide:

(i) The participation of Hokonui Rūnanga in the development and review of the plans and reports required by conditions.

(ii) The participation of Hokonui Rūnanga in any responses to exceedances required by the conditions of this consent.

(iii) The restoration of riparian margins within the Mataura River Mātaitai Reserve, particularly in the vicinity of the Mataura plant.

(iv) The joint management of the trap and transfer programme for tuna required by condition 7 - 13 of consent AUTH-20171566-01AUTH-20171566-02 (resource consents to use the weir to dam and divert water).

(v) The implementation of a monitoring and reporting programme within the affected reach of the Mataura River that reflects Ngāi Tahu indicators of cultural health.

(vi) Research into kanakana populations in the Mataura River to be undertaken by the consent holder in consultation with Hokonui Rūnunga.

(vii) The improvement of access for Hokonui Rūnunga to Te Au-Nui-Pihapiha-Kanakana.

(viii) The provision of markers of cultural identity within and immediately adjacent to the site of the activities to be undertaken by the Consent Holder.

45. The Kaitiaki Plan shall identify agreed programmes of work to be undertaken by the consent holder and Hokonui Rūnanga to give effect to the aforementioned objectives. The Kaitiaki Plan may also include additional work programmes which are unrelated to the objectives described in condition 44 which the Consent Holder and Hokonui Rūnanga agree to implement to address emerging environmental issues. The Consent Holder shall:

(i) Provide the Consent Authority with a copy of the programmes of work; and

(ii) Implement the programme of work in partnership with Hokonui Rūnanga.

46. The Consent Holder shall provide the Consent Authority with a report by 30 November each year which:

(i) Describes progress made in partnership with Hokonui Rūnanga over the previous 12 months towards implementing each programme of work; and

(ii) Describes work undertaken over the previous 12 months towards implementing any already agreed programme of work.

This report can be included in the Annual Monitoring Report required in condition 43 of this consent.

47. The Kaitiaki Plan shall be reviewed at five yearly intervals in partnership with Hokonui Rūnanga. The purpose of the review shall be to assess progress on projects (including monitoring undertaken) identified in the plan and to identify if changes are required to better achieve cultural outcomes.

A written report detailing the results of the review shall be submitted to the Consent Authority, Attention RMA Compliance and Enforcement Manager (or their equivalent) within 30 working days of the work on the review being undertaken. A copy of the review report shall also be submitted to Hokonui Rūnanga Atten: Environmental Department.

48. If Hokonui Rūnanga determine in writing that they do not wish to participate with the Consent Holder in the preparation and implementation of the Kaitiaki Plan, the Consent Holder shall not be required to meet the requirements of conditions 44 to 47 above.

Technical Working Party

49. The Consent Holder shall facilitate the continuation of the Mataura Wastewater Technical Working Party (TWP) and shall distribute the annual monitoring report described in Condition 43 ~~24~~ to the members of the TWP. The purpose of the TWP shall be to receive reports, review results and discuss the results of the monitoring and any concerns for consideration, and initiate meetings as required.

50. The TWP shall comprise representatives from:

(i) The Consent Holder

(ii) The Southland Fish and Game Council

(iii) The Department of Conservation

(iv) Te Ao Marama Incorporated

(v) Hokonui Rūnanga

(vi) Public Health South

(vii) Gore District Council

(viii) Consent Authority

51. The Consent Holder shall be responsible for convening meetings, the provision of a venue for meetings and providing any necessary administrative support to the TWP. Should any of the external parties referred to in this condition chose not to continue to be part of the TWP then the Consent Holder shall not be deemed to be in breach of these conditions.

Charges

52. Charges, set in accordance with section 36(1) of the Resource Management Act 1991, shall be paid by the consent holder to the Southland Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Resource Management Act 1991.

Review

53. The Council may serve notice in accordance with Section 128 and 129 of the Act, during the month of December 2021, and in the month of December each year thereafter, of its intention to review the conditions of this consent for the purposes of:

    (i) Amending the monitoring and reporting conditions, including the EMP, to ensure that they continue to provide accurate and relevant information on the effects of the discharge;

    (ii) Addressing any unanticipated adverse effect on the environment which may arise from the exercise of the consent, including the content and application of any Contingency Plans and the revision of the best practicable option to address any adverse effects.

    (iii) Amending discharge standards and load limits in response to the review report provided in accordance with Condition ~~15~~ 28.

    (iv) Amending the conditions of this consent in response to the Consent Holder implementing an alternative treatment and discharge option in accordance with Condition 20.

54. The Council may serve notice in accordance with Section 128 and 129 of the Act, within 12 months of receiving the report required by condition 23 ~~any Regional Plan or plan change giving effect to the National Policy Statement for Freshwater Management (2020) becoming operative,~~ of its intention to review the conditions of this consent for the purposes of:

    (i) Amending the discharge standards and loads to reflect the objectives and limits set in the Regional Plan, including the timeframes by which amended discharges standards and loads are required to be achieved.

    (ii) Providing for any investigations necessary to identify Plant improvements required to achieve any revised discharges standards and limits.

Land Use Permit

Mataura Weir

Details of Permit

Purpose for which permit is granted:		To use an existing weir on the Mataura River
Location	- site locality	Mataura River, adjacent to 18-30 McQueen Avenue, Mataura
	- map reference	At or about NZTM: Easting 1281400, Northing 4876600
	- catchment	Mataura
Legal description of land at the site:		Crown land (river bed)
Expiry date:		7 November 2026

Schedule of Conditions

1. This consent shall expire on 7 November 2026.

   (Note: Pursuant to Sections 123 and 124 of the Resource Management Act 1991, a new consent will be required at the expiration of this consent. The application will be considered in accordance with the plans in effect at that time, and the adverse effects of the proposed activity.)

2. This consent authorises the land use associated with the existing Mataura River Weir.

3. This consent is subject to the conditions of Permits AUTH-20171566-01 AUTH-20171566-02 and those below.

~~**Trap and Transfer - Kanakana**~~

~~4. Within six months of the commencement of this consent, the Consent Holder shall engage an appropriately qualified freshwater ecologist (or similar) to investigate the practicalities and likely outcomes of extending the existing Elver Trap and Transfer programme (under Permits AUTH-20171566-01 AUTH-20171566-02) to include kanakana.~~

~~5. A copy of this review shall be provided to the Consent Authority and Hokonui Rūnanga.~~

~~6. If the review concludes that the trap and transfer of kanakana is practicable and beneficial, then this shall be included in the existing Trap and Transfer programme (under Permits AUTH-20171566-01 AUTH-20171566-02).~~

Map A – Water Meter Locations