HAWKE'S BAY REGIONAL COUNCIL

TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

ASSESSMENT OF RESOURCE CONSENT APPLICATION

Applicant: Central Hawke's Bay District Council

Application Number: APP-126522

Activity Type Non-Complying (when bundled)

Notification Publicly Notified (requested by the applicant)

Property Address: Takapau Oxidation Pond, Burnside Road, Takapau,

Previous Consent Number: AUTH-109612-03 (Discharge to Water) and AUTH-123445-01 (Discharge to Air)

Authorisation No:	Activity Description	Activity Type:	Activity Location
AUTH-127077-01 (replacement)	to discharge treated sewage effluent from the Takapau oxidation pond into or onto land (wetland) in circumstances which will result in that contaminant entering water.	Discharge Permit	Takapau Oxidation Pond, Burnside Road, Takapau,
AUTH-127078-01 (replacement)	to discharge to air (odour) from the Takapau oxidation pond	Discharge Permit	Takapau Oxidation Pond, Burnside Road, Takapau,
AUTH-127079-01 (new consent)	To discharge treated sewage effluent from the Takapau oxidation pond to land	Discharge Permit	Takapau Oxidation Pond, Burnside Road, Takapau,
AUTH-127616-01 (new consent)	to operate a farm not complying with permitted activity standards of Rule TT1 or conditions of Rule TT2	Land Use Consent	Takapau Oxidation Pond, Burnside Road, Takapau,

1. REPORT STATUS

This report has been prepared pursuant to section 42A of the Resource Management Act, 1991 (RMA). It provides an independant assessment of the application, discussion of the submissions received and

recommendations of the author on the application made by Central Hawke's Bay District Council (hereafter referred to as the applicant or CHBDC).

This report has been prepared with technical guidance from Pattle Delamore Partners (PDP) in terms of the following aspects:

- Treatment and irrigation of soils
- Groundwater
- Surface water and ecology
- Odour and air
- Natural hazard

2. CONSENT HISTORY

Central Hawke's Bay District Council (hereafter referred to as the applicant or CHBDC) proposes to replace their current wastewater discharge consent (AUTH-109612-03 / DP180115W) and discharge to air (AUTH-123445-01 / DP180124A) and apply for two new consents being a discharge to land and production land use consent.

The two existing consents authorise the discharge of treated wastewater to the Makaretu River via an oxidation pond to a land passage and discharge contaminants (odour) to air as a result of the receipt, treatment and discharge of wastewater at the site at 45 Burnside Road. These existing consents (AUTH-109612-03 and AUTH-123445-01) expired on 31/10/2021. As replacement consents were lodged six months prior to the consents expiring, the applicant was afforded rights to continue to exercise AUTH-109612-03 and AUTH-123445-01 under s124(3) of the RMA until the new consent is decided.

Through their public consultation, the applicant has identified the community's desire to move towards a predominantly land based discharge thereby removing much of the discharge to the river. Therefore, in addition to the replacement discharges (AUTH-127077-01 and AUTH-127078-01), the applicant is seeking additional consents AUTH-127079-01 to discharge treated sewage to land and land use consent AUTH-127616-01 associated with the operation of a farm (where effluent will be used for irrigation) exceeding the individual land use limits.

3. COMPLIANCE HISTORY

Compliance reporting for the previous discharge to water (AUTH-109612-03) and discharge to air (AUTH-123445) prepared in the years 2018-2019, 2019-2020, 2020-2021 show regular non-compliance with the dry weather flow rate and total flow rate per day and exceedances in relation to TSS and cBOD-5. The applicant proposes addition of UV treatment and filtration as part of the proposed upgrades (see Section 4 below). This will go some way to improve the existing non-compliances.

4. SUMMARY OF PROPOSAL

The collection of consents applied for will allow the applicant to reduce the amount of wastewater being discharged to the Makaretu River in favour of adopting a predominantly land based discharge in the form of irrigated wastewater which will have the double benefit of reusing water onto land in a water scarce area, providing nutrients for farming activities that would otherwise be applied from synthetic sources and reducing the discharge to the river, which is seen as culturally undesirable. It is

noted that some discharge to the river will still occur and the cultural impact on this will be discussed below.

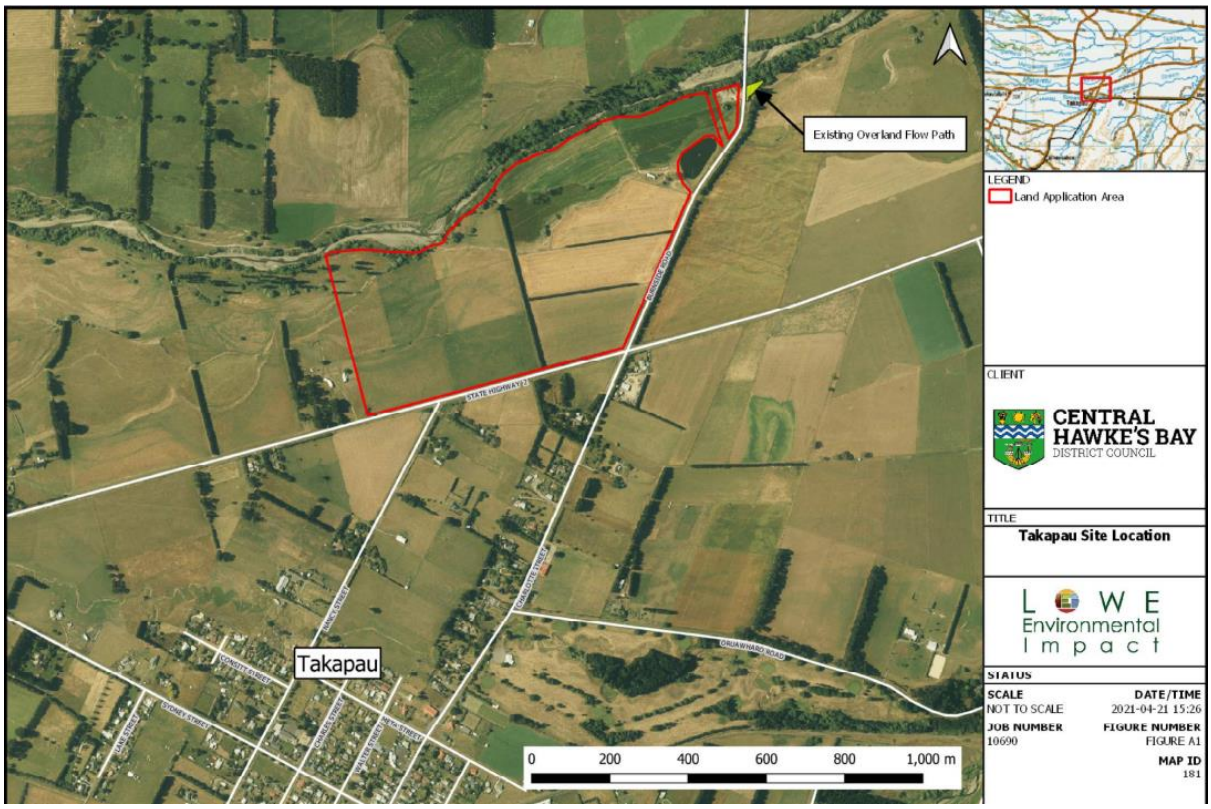

Figure 1: The Location of the Site, being the existing WWTP and pond, existing high rate land passage which discharged into the Makaretu River and the property (red) that is sought to be the location of the discharge to land (Source: LEI, application Appendix A).

The applicant proposes a staged approach for the new system to provide for adopting the predominantly land based discharge as outlined below. The applicant proposes that with the additional storage and irrigation to land, wastewater discharges can be deferred to the Makaretu River to periods of higher flows.

- Stage 0 (**0-3 years** following the grant of consent) – the continued current discharge regime via the surface water discharge to the Makaretu River. This results in up to 100% of treated wastewater being discharged to the Makaretu River

- Stage 1 (**within 3 years** following the grant of consent) – the addition of 2,000m^3 storage within the storage pond and a minimum of 5ha of irrigation of land. Approximately 40% of the treated wastewater is predicted to be discharged to the Makaretu River in an average year.

- Stage 2 (**within 5 years** following the grant of consent) – the addition of a new storage pond with 18,000m^2 capacity and an additional 15 – 25ha of irrigation. Approximately 10% of the predicted 2048 flows are expected to be discharged into the Makaretu River in an average year. The 2048 flow rates have been based on predicted wastewater volumes estimated from current flow rates and population forecasts.

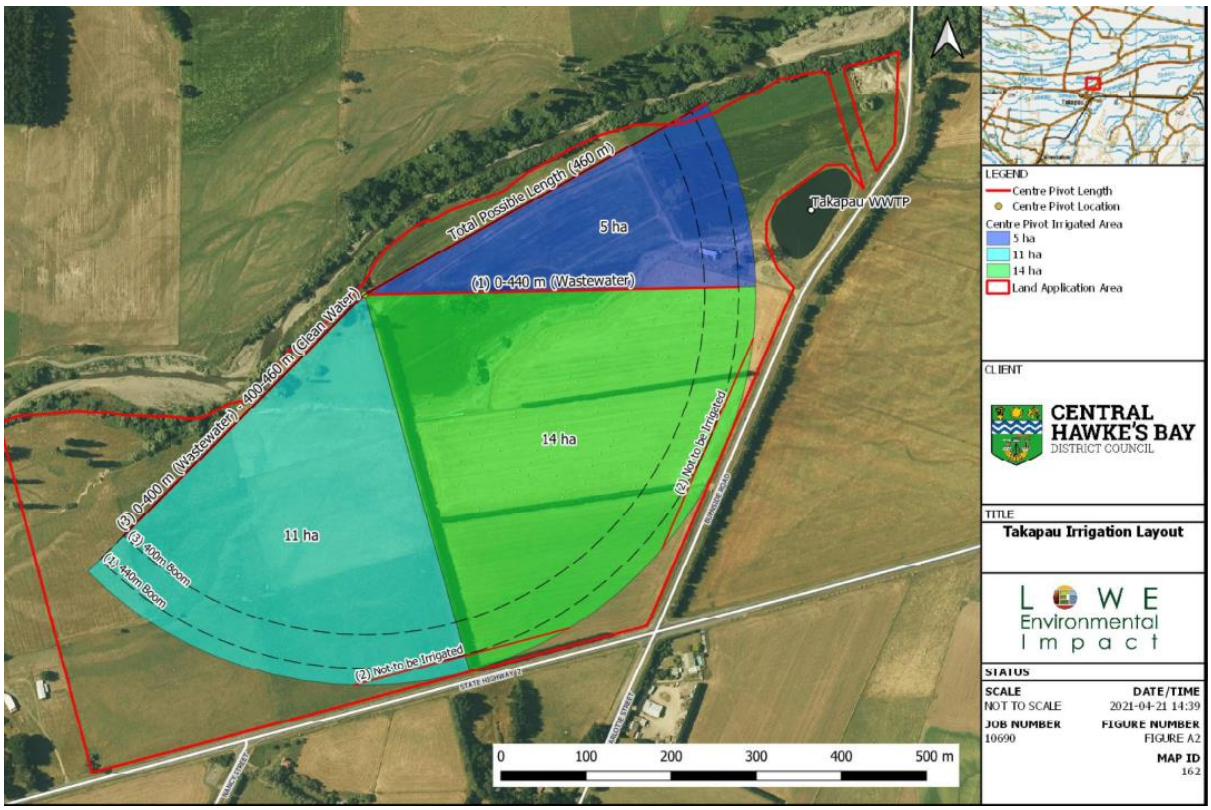

Figure 2: The proposed irrigation area (Source: LEI, application Appendix A)

4.1 PROPOSED TREATMENT IMPROVEMENTS

The sampling undertaken by the applicant to date shows that the existing pond appears to be generally effective at removing a reasonable proportion of nutrients, however there are some large spikes of ammoniacal nitrogen. The application provides that additional filtration and ultra violet (UV) treatment is proposed as well as an additional storage pond.

Stage 1 will result in an additional 2,000m^3 storage utilised in the existing pond which has capacity for additional storage without any works required (i.e. some of the freeboard area will be used for additional storage).

The additional filtration and UV treatment will improve the quality of the discharge to land and to the river. The additional storage pond (shown on Figure 3 below) is proposed to be built adjacent to the existing treatment system to a capacity of 18,000m^3. This has been calculated to allow storage and irrigation of approximately 90% of the projected 2048 Takapau population's annual wastewater with 10% discharging to the high rate land passage when river flow exceeds median.

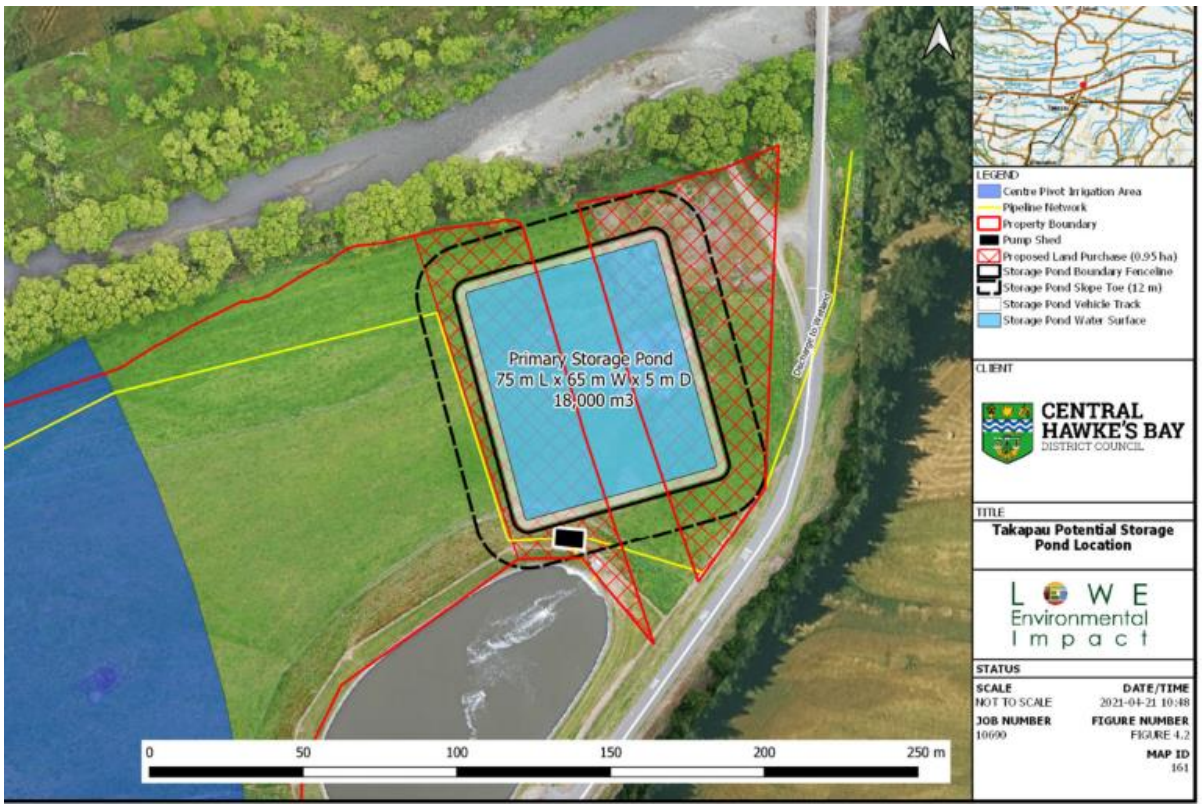

Figure 3: Preliminary Location of Proposed Additional Storage Pond. Source: LEI (April 2021) *Takapau Community Wastewater Discharge Conceptual Design* (document reference: T:C.15)

The applicant has not provided details on the proposed type of UV treatment or filtration system, but has agreed to discharge quality parameters (Condition 3 in Appendix 1 of this report) and a condition requiring a detailed filtration and UV design report to be submitted to council with 12 months of the commencement of the consent (i.e. within Stage 1) (Condition 5 in Appendix 1 of this report).

4.2 Proposed Farm Management

The applicant proposes to irrigate the wastewater onto an area of land owned and managed by a separate entity (a farm owner/manager). It was highlighted, several times, the risk to the applicant (future consent holder) of not having control of the land the wastewater is to be irrigated onto and having a third party controlling the irrigated wastewater.

The proposed wastewater hydraulic and nutrient loading rates over the irrigated area are considered to be generally suitable, however wastewater irrigation alone will not be sufficient to operate the farming regime as the only source of nutrients, thus fertiliser usage will still be required to supplement irrigation even when wastewater volumes are high. The applicant initially proposed maximum application limits (from wastewater and fertiliser) of 250kg/nitrogen (N)/ha/year and 80kg/phosphorus (P)/ha/year. These figures were used to assess farm nutrient losses and the applicant considered this to be reasonable to enable flexibility within the farming system. Following discussion during pre-hearing meetings, the applicant agreed to lower these limits to 200kg/N/ha/yr and 65kg/P/ha/yr to provide better environmental outcomes, particularly in terms of leaching of nitrogen to groundwater. In addition to these lower limits, a condition is proposed allowing HBRC to review the limits set out in terms of nitrogen and phosphorus for a number of reasons.

5. Background to the Application, Site and Environment Setting

The application documents clearly outline the background to the application, desire to move towards a land based system by the applicant's rate payers and local iwi and the preferences behind the proposed system. These will not be repeated here. In addition, the application documents clearly set out the location and physical constraints of the general location of the existing effluent pond, proposed storage pond, location of land based discharge and location of surface water discharge (collectively hereafter referred to as the 'site').

6. Site visit

A site visit was undertaken on 21 May 2021 by the reporting officer, Tania Diack – HBRC Team Leader Consents, Darren de Klerk – CHBDC Direction Projects and Programmes and Hamish Lowe of Lowe Environmental Impact (LEI) acting on behalf of the applicant. The site visit included an inspection of the existing pond, wastewater treatment plant, location of existing and proposed surface water discharge, location of proposed additional storage pond and a walk over of the area proposed for land based discharge.

The conditions of the site visit were generally as expected and as per the multiple application documents provided by the applicant in support of the applications.

7. Timeline of Replacement and New Consenting Process

The applicant lodged the application for the activities (replacement and new consents) on 30/04/2021. Existing consents AUTH-123445-01 (discharge to air) and AUTH-109612-03 (discharge to water) expired on 31/10/2021. As the replacements for these consents were lodged prior to six months of the expiry, s124 protection was applied to these existing consents, to allow the consent holder to continue operating under AUTH-123445-01 (discharge to air) and AUTH-109612-03 (discharge to water) until a decision is made on the replacements.

The application was made up of the following documents:

- Central Hawke's Bay District Council (29 April 2021) Takapau Wastewater Discharge Consent Application [Cover Letter, Form 9, HBRC Form A and Form B]
- Central Hawke's Bay District Council (April 2021) Takapau Wastewater Treatment Plant Discharge Resource Consent Application and AEE (document reference: TD.1_Takapau-Application_and_AEE-210428.docx) (updated via email on 30/01/2021)
    - Appendix A – Takapau Figures
    - Appendix B – Takapau Community Engagement Summary
    - Appendix C – Takapau Property Owner Approvals
    - Appendix D – Records of Title
    - Appendix E – Takapau Proposed Conditions
    - Appendix F – Schedule IV Checklist
    - Appendix G – LEI (April 2020) *Discharge to Land of Takapau Wastewater Assessment of Environmental Effects: Land* (document reference: T:D.10)
    - Appendix H – Beca (28 April 2021) *Takapau WWTP- Surface Water Assessment of Environmental Effects* (document reference T:D.25)
    - Appendix I – Beca (23 April 2021) *Takapau Wastewater Treatment Plant – Hydrogeological Assessment* (document reference T:B.14)
    - Appendix J – Beca (28 April 2021) *Statutory Rules and Evulation – Takapau Wastewater Treatment Plant* (document reference T:D.90b)
    - Appendix K – LEI (April 2021) Takapau Community Wastewater Discharge Conceptual Design

Following review of the application documents, a s92 request for further information was sent to the applicant on 26/05/2021, which included an initial memo from Pattle Delamore Partners (PDP) who reviewed the technical aspects of the application on behalf of the Council:

- HBRC (dated 19/05/2021, but sent 26/05/2021) *Request for Further Information*
- Pattle Delamore Partners (PDP) (25/05/2021) *Memorandum Re: Takapau WWTP Discharge Consent Revie*w

The applicant provided some of the additional reports sought by the 26/05/2021 s92 request on 02/06/2021. This did not fulfil the s92 request for additional information.

- LEI (12/2020) Evaluation of Soils to Receive Takapau Wastewater (document reference: T:B.15)
- LEI (25/03/21) *Existing Farming System* (document reference: T:B.13)
- LEI (29/03/21) *Existing / Future Farming System and OverseerFM Analysis* (document reference: T.C14a)
- LEI (14/04/21) *Drummond Overseer and Planning Assessment* (document reference: T.C.14b)

The applicant provided an initial s92 response on 20/08/2021, this included the following reports and documents.

- CHBDC (20/08/2021) *Request for further information – Takapau Wastewater Discharge APP-126522*.
    - Annex A.1: Joanne Heperi (April 2021) *Cultural Impact Assessment: In relation to an application for renewal of resource consents for Takapau Wastewater Treatment Plant* (document ref: T:D.50)
    - Annex A.2: CHBDC letter (08/07/21) *Re: Follow up to Takapau Cultural Impact Assessment*
    - Annex A.3: Heperi letter dated (10/08/21) Response to CHBDC letter of 08/07/21
    - Annex B: Revised Draft Conditions (Version 2)
    - Annex C: Beca (18/08/21) *Takapau WWTP Consent Application Update with CIA* (document reference: T:D.90c)
    - Annex D: Beca (19/08/21) *Takapau Wastewater Discharge to Land – Freshwater Ecological Impact Assessment* (document reference: T:D.66)
    - Annex E: *Takapau WWTP and Discharge – Schematic of Proposed Treatment and Discharge*
    - Annex F: Beca Letter (20/08/21) *Re: Takapau WWTP Hydrogeology s92 Response* (document reference: T:D.20)
    - Annex G: Beca Letter (24/06/21) *Takapau WWTP Discharge Consent Application – Disposal to Land Upgrade – Outline of Intended Treatment Plan Improvements*.

The best practical option report was received on 30/08/2021.

- LEI (November 2020) *Takapau Wastewater Treatment and Discharge Best Practicable Option*. (document reference: T:C.12)

On an assessment of the provided information, there was still a number of items outstanding that the applicant had not sufficiently the information required by the 26/05/2021 request for information pursuant to s92 of the RMA. In addition there were differences of professional opinion noted between the applicant's technical team and HBRCs technical team. A further letter was sent to the applicant specifying the outstanding information required to help understand the environmental effects of the proposed activities:

- HBRC (08/09/2021) Request for Further Information
    - Appendix 1 – *Table of s92 correspondence to date and outstanding requirements*
    - Appendix 2 – PDP (07/09/2021) *Memorandum Re Takapau WWTP Discharge Consent s92 Response Review*

The applicant provided a letter in response to the HBRC letter of 08/09/2021 clarifying a number further points and refusing to provide additional information on the additional information. Through this letter and correspondence with the applicant, the applicant sought to proceed with public notification of the application, as was requested in the original application.

- Central Hawke's Bay District Council (24/09/21) *Request for Further Information – Takapau Wastewater Discharge APP-126522 – Second Response*.

In accordance with s92A of the Resource Management Act, if the information requested under s92(1) is not provided, HBRC must proceed to consider the application under s104 on a publicly notified basis. Given that the applicant wanted to proceed with public notification, HBRC had little other recourse to continue asking the applicant to provide the information sought which had not yet been provided. Section 7.1, below, outlines the outstanding information and matters of contention between the technical teams.

HBRC also got PDP to review the conditions proposed by the applicant (V2) to provide topics for discussion of the pre-hearing meeting (discussed below).

- PDP (24th November 2021) *Memorandum Re: Takapau WWTP Discharge Consent Further s92 Response Review*

Following the three pre-hearing meetings that were held (19 November 2021, 13 December 2021, 28 June 2022), the applicant provided the following letters, to clarify points raised in the pre-hearing meetings.

- Central Hawke's Bay District Council (22nd December 2021) *Takapau Wastewater Discharge Consent Application*
- Lowe Environmental Impact (31st January 2022) *Memorandum Re: Takapau Discharge Property – Nutrient Application and Loss Update* (document reference: T:C.14c)
- Central Hawke's Bay District Council (29 July 2022) *Takapau Wastewater Discharge Consent Application – CHBDC Response to 3rd Pre-Hearing Meeting – APP-126522*
    - Beca (22 July 2022) *Re: Pre-Hearing Meeting Three – Technical Response to Outstanding Matters* (Document reference: T:D.26)

The applicant's response to the third pre-hearing meeting was reviewed in a memo from PDP.

- PDP (22nd August 2022) *Memorandum RE: Takapau WWTP Discharge Consent Further Information Review*

7.1 Outstanding Issues / Points of Contention Between Technical Review

The following lists the outstanding issues of contention between the applicant and the processing team.

1. Cultural Impact
    a. It was noted that on the CHBDC Plan, an 'Area of Cultural Significance to Maori' was located on an area of the site proposed to have effluent irrigated to it. HBRC requested confirmation that the author of the CIA was made aware of this identified site mapped on the CHBDC plan and the location of this was taken into account in the CIA. CHBDC did not feel it was appropriate to advise the author of the CIA to confirm the location of the identified site and CHBDC felt that all sites of significance to Maori had been incorporated into the CIA.
2. Land Management
    a. Farm Environmental Management Plans have not yet been provided. As such, it is considered difficult to understand what is being consented for the production land use consent and the effect of the proposed irrigation of wastewater on the continued farming activity. HBRC considers the irrigation of wastewater and the farming activity

not to be separate. It is noted however that the applicant has provided the information required by Schedule 22 of the RRMP in the application documents.

3. Impact on Surface Water
    a. The applicant have proposed to increase their discharge quality parameters compared to what was originally applied for in the consent and what was assessed as part of the impacts on surface water, this is described in more detail in Section 8 below, however the result of this is a recommendation that discharge quality parameters for Stages 0 and 1 of the consent are more stringent that at Stage 2 given that at Stages 0 and 1, wastewater can be discharged to the river at below minimum flow.

7.2 PUBLIC NOTIFICATION

Following the applicant's request for HBRC to proceed with public notification of the applications, the application was publicly notified on Thursday 7th October 2021 in the Hawke's Bay Today and Central Hawke's Bay Mail/ Submissions closed at 17:00 on Friday 5th November 2021.

Regulation 10(2) of the Resource Management (Forms, Fees, and Procedure) Regulations 2003, prescribes the individuals that the consent authority is required to serve notice of an application for resource consent which is to be publicly notified. Following the prescriptions of Regulation 10(2) of the 2003 Regulations, the following list of individuals / groups was identified and notified of the application for resource consent:

Table 1: Organisations / Individuals Directly Notified of Consent

Organisation / Individual	**Reasoning**
Hapū of Te-Rongo-a-Tahu Marae	Hapū identified as having Mana Whenua status in CIA
Hapū of Rākautātahi Marae	
Hapū of Waipukurau Marae	
Hapū of Taiparu Marae	
Hapū of Mataweka Marae	
Ngāti Kahungunu Iwi Incorporated	Iwi organisation
Te Taiwhenua o Heretaunga	
Te Taiwhenua o Tamatea	
Heretaunga – Tamatea Settlement Trust	
Aorangi Maori Trust Board	
Mary June Drummond	Landowners of subject site
Jenifer Nan Dalby	
Ian Ralph Ellis	
Karen and Robert McVeigh	Landowners directly to south of SH2
Kathryn Partridge	
Kirsty Taiaroa Kirsty and Julie Oakford	
Hawke's Bay Fish and Game Council	Other specified by Resource Regulations 2003
Department of Conservation	
Department of Conservation (Ahuriri / Napier Office)	
Hawke's Bay District Health Board – Public Health Unit	
Heritage New Zealand Pouhere Taonga	
Central Hawke's Bay District Council	
Waka Kotahi	
Hawke's Bay Regional Council	

A total of two submissions were received during the submissions period and no late submissions were received. The two submissions were as follows:

1. The Hawke's Bay District Health Board (DHB) submitted a neutral submission neither supporting or opposing the application. This submission identified the wish to be heard in support of the submission and involved in any pre-hearing meetings.

   The DHB's submission was relatively short as follows: *'our job is to protect public health under the Health Act and the Disabilities Act*'. It is understood from conversations following the submission that the DHB were under pressure from the COVID-19 caseload and therefore were unable to submit a more thorough submission.

2. Mr Bill Hale, a Takapau community member, submitted a neutral submission neither supporting or opposing the application. This submission identified that he did not wish to be heard in support of the submission but did wish to attend any pre-hearing meetings.

   Mr Hale's submission raised the following:
   - Concern about proximity of the proposed land based discharge to the entrances to the Takapau Village (being Charlotte and Nancy Street) and the potential impacts this could have on future development of the Takapau village;
   - Concern about the potential for odour and risk to human habitation in the Takapau township; and,
   - A desire to see vegetated borders and fences to prevent public access and mitigate any visual and odour issues.

7.3 PRE HEARING MEETINGS

Given that only two neutral submissions were received, it was the preference of the applicant and the processing planner to proceed with pre-hearing meetings to try and alleviate the concerns of the submitters. The processing planner considered that given there were still a number of outstanding issues to be resolved between the technical specialists (as specified in Section 7.1 above) and that these specific issues were not brought up by either submitter, that two pre-hearings should be held. The first, less technical meeting to allow the concerns of the submitters to be heard and allow the applicant the opportunity to alleviate these concerns. Following this, a more technical meeting would be had to discuss the conditions of consent and points of contention between the technical specialists, as well as any further discussion with the submitters.

The first pre hearing meeting was held on Thursday 18 November 2021 between 09.30 - 12.00 in the Central Hawke's Bay District Council Chambers. The minutes of this meeting are appended to this report as Appendix 2.

The second pre-hearing meeting held on Monday 13th December 2021 between 09.00 – 16.45 and was facilitated by Martin Williams. This second pre-hearing meeting resulted in further discussion with the submitters and updating conditions of consent. The pre-hearing meeting report produced by Mr Williams and V6 of the conditions are appended to this report in Appendix 3.

Following the conclusion of the first two pre-hearing meetings the reporting officer proceeded with drafting a s42a report with recommended conditions of consent. The recommended conditions of consent and the recommended duration of 20 years was on the basis of a number of unknowns including the impact of the proposed activity on the Porangahau catchment and the unknown impact of the proposed activity on surface water given the applicant's proposed discharge quality standards

had not been assessed. On the basis of the recommendations of the processing planner, the DHB identified that they did not want to proceed to a hearing.

However, the applicant requested another pre-hearing meeting as they did not agree with one condition (relating to discharge quality standards – condition 3) and the duration of the consent. As such a third pre-hearing meeting was held on 28 June 2022, again facilitated by Martin Williams. It was agreed that the applicant would provide some additional information to alleviate the reporting officer's concerns about the potential unknown effects of the proposed activity. The pre-hearing meeting report produced by Mr Williams is appended to this report in Appendix 4.

7.4 STANCE OF SUBMITTERS FOLLOWING PRE HEARING MEETING

Following ongoing discussion with the District Health Board, on 03/03/2022[1], the DHB made the following statement:

> '*With so much uncertainty as to:*
> - *the treatment process (which the applicant has now extended timeframes for the design),*
> - *discharge quality parameters (which the applicant has now raised) - setting parameters saying they are suitable for land – yet still applying for discharge to the Mataretu (HRLP) ("given the river discharge is to be minimised, there is no significant gain from having a more stringent requirement" (CHBDC letter dated 22/12/2021)).*
>
> *And:*
>
> *With the addition of 57(a)(d) to the consent condition by the CHBDC - "opportunities to improve the treatment plant performance, and discharge standards, to reflect the requirements for the land application system, noting that this may see the effluent standards relaxed to allow higher wastewater loads and less synthetic fertiliser;*
>
> *Given the changes to the consent conditions since the last mediation meeting, and the indication to potentially relax standards - Health does not support this consent for 35 years.*
>
> *HBDHB would like to suggest a 10 year time frame for this consent.*
>
> *After 5 years the treatment plant plans would have been approved and the plant built and operation of the treatment plant, (stage 1 and 2 complete) discharge control parameters and long term improvements should have been identified through the system review reports and Regional Council audits of consent conditions.*
>
> *At 10 years the treatment process will have improved and the management of the process/plant optimised. At this stage a 35 year consent would be more appropriate.'*

The above stance of the DHB has been taken into consideration in the processing of this consent, particularly at Sections 8 (on conditions) and 16 (assessment on duration) of this report.

The DHB were involved in the third pre-hearing meeting which occurred after the above statement was made by the DHB, they have not provided an updated statement, however following the drafting of this s42a report, the final set of conditions and s42a report will be sent to the DHB to allow them to make a decision as to whether they wish to proceed to a hearing or whether the proposed conditions of consent mitigate their concerns.

[1] Email from Reynold Ball, Health Protection Officer, Hawke's Bay District Health Board (03/03/2022).

8. RECOMMENDED CONSENT CONDITIONS

A set of recommended consent conditions is provided for considerations. These conditions are similar to the conditions agreed with the applicant during the second prehearing meeting (13 December 2021). The version of conditions agreed with the applicant during the pre-hearing meeting were dated 14th December (version 6), the numbering has been updated to ensure a chronological order is maintained. The conditions relevant to each activity have been presented in a way that the report writer considers to be clearest in the Appendix 1 of this report.

Notable changes that were made following the pre-hearing meeting of 13 December 2021 are outlined below. The details of condition 3 was the subject of the third pre-hearing meeting (28 June 2022), this is discussed in detail below.

Condition 3

Following the second pre-hearing meeting of 13th December, the applicant provided an update to their proposed discharge limits in letter of the 22/12/2021[2] which increased the limits previously used as 'placeholders' in the original, notified application documents. The applicant reasoned that this increase was more in line with what would be expected from wastewater treatment plants and that the historic sampling of ammoniacal nitrogen has been particularly low. These updated limits were also higher than those assessed in the Beca Surface Water Assessment undertaken for the application[3] and higher than the original consent limits of the previous consent (AUTH-109612-03 AUTH-123445-01) for TSS and $cBOD_5$.

The applicant's reasoning for these increased discharge quality parameters is that the discharge to the river will be at higher flows than under the previous consent (as limited by Condition 14) and as such represents a higher level of dilution. The applicant repeated this reasoning in an email dated 22/03/2022[4] when asked to provide evidence that the increased limits would not impact the conclusions reached in the Beca Surface Water Assessment. No updated assessment on the impact of the increased limits on surface water was provided by the applicant even though they propose an increase in discharge quality parameters.

At Stage 0 all wastewater is to be discharged to the river at any flow and at Stage 1 discharge can occur at half median discharge. As such, it was considered by the reporting officer that these more relaxed standards are not considered suitable during these stages given the unknown effect this will have on surface water and this is in line with the Hawke's Bay District Health Board's concerns as outlined in Section 7.4 of this report. Additionally, PDP have expressed concerns[5] about these increases in discharge quality parameters on surface water and also raised concerns about the significant increase in the limit for ammoniacal nitrogen and the potential impacts this may have on surface water when the discharge occurs to surface water. Subsequently, a draft set of conditions was provided to the applicant for comment which had two sets of discharge quality standards, one being for Stages 0-1 (which were the median and 95%ile of the existing discharge as monitored by the applicant and as presented in the Beca Surface Water Report) and the other being for Stage 2, which were proposed by the applicant for all stages. However, given the applicant had not provided an assessment of the effects of these effluent quality limits, the unknown impacts on the surface water body were included in a recommended 20 year duration.

Following the third pre-hearing meeting, the applicant provided an assessment of the effects of their

[2] CHBDC (22nd December 2021) Letter RE: *Takapau Wastewater Discharge Application,* p.1-2

[3] Beca (28/04/2021) *Takapau WWTP – Surface Water Assessment of Environmental Effects* (document reference: T:D.25), p.12

[4] Email from Fiona Clark to Sophia Edmead on 22/03/2022

[5] Email from Hilary Lough to Sophia Edmead on 15/03/2022

proposed limits for Stage 2 on the Makeretu River and also provided some proposed updates to the Stages 0 – 1 limits to ensure that the applicant considers they can remain compliant with the parameters enforced.

PDP reviewed[6] the updated figures and raised concerns that for Stages 0 and 1, the increased limits at these stages (when discharge can occur during less restrictive flow regimes of the river) had not been assessed in terms of the impact on surface water. Although this is generally agreed with, Stages 0 – 1 cover only the first five years of the consent being implemented, as such any change in effects is likely to be temporary in nature. In addition, the quality of the discharge is unlikely to change from existing significantly in the first five years of the consent, apart from to improve given the proposed filtration upgrade and addition of UV treatment. Therefore, it is considered that the applicant's proposed limits for Stage 0 – 1 are suitable. The impact on surface water is discussed in Section 10 of this report. Although what is proposed by the applicant is still an increase compared to what was notified to the public, the nature of any environmental effects is temporary given the short term nature of Stages 0-1 of the proposed consent. Stage 2 will be up and running within five years (by 2027) and therefore the proposed application is in line with the 2030 goals of the Tukituki Chapter of the RRMP. In addition, ongoing surface water monitoring and environmental monitoring are built into the recommended consent conditions to ensure an adaptive management approach can be taken if it is noted that environmental effects are above and beyond those expected.

In terms of the discharge quality standards for Stage 2, the applicant provided an assessment of the impacts of the proposed discharge standards at different river flow regimes. PDP have highlighted some concerns with some of the criteria used for comparison and that the dissolved reactive phosphorus is above Tukituki Plan Change 6 limits and shown to have a moderate increase downstream of the discharge with no comment provided on the cumulative effects to the catchment. However I consider that the proposed condition set which seeks to reduce discharges to the river (i.e. land based discharge is prioritised) will help protect the surface water resource. As above, ongoing surface water monitoring and environmental monitoring are built into the recommended consent conditions to ensure an adaptive management approach can be taken if required.

[6] PDP (22nd August 2022) *Memorandum RE: Takapau WWTP Discharge Consent Further Information Review*

Table 2: Comparison of Discharge Parameters from Previous Consent, Monitoring Results and As Proposed by the Applicant

Parameter	**Authorised by previous Consent** (AUTH-109612-03 AUTH-123445-01)	**HBRC Monitoring Results (as shown in Table 6 of the surface water assessment)***		**'Place Holders' Proposed by the applicant and notified**		**Limit Proposed by the Applicant For Stage 1 (29 July 2022 Letter)**		**Limit Proposed by the Applicant for Stage 2 (29 July 2022 Letter)**	
		Median	**95% Percentile**	**8 out of 12 Samples**	**2 out of 12 Samples**	**8 out of 12 Samples**	**2 out of 12 Samples**	**8 out of 12 Samples**	**2 out of 12 Samples**
Carbonaceous Biochemical Oxygen Demand – 5 day ($cBOD_5$)	60mg/L	26mg/L	54mg/L	30mg/L	60mg/l	40mg/L	70mg/l	40mg/L	80mg/L
Total Suspended Solids (TSS)	100mg/L	79mg/L	155mg/L	90mg/L	180mg/L	100mg/L	155mg/L	100mg/L	180mg/L
Ammoniacal Nitrogen (NH4-N)	-	0.33mg/L	19.97mg/L	12mg/L	25mg/L	20mg/L	30mg/L	20mg/L	30mg/L
Dissolved Inorganic Nitrogen (DIN)	-	5.8mg/L	20.06mg/L	4mg/L	8mg/L	25mg/L	35mg/L	25mg/L	35mg/L
Dissolved Reactive Phosphorus (DRP)	-	2.67mg/L	3.81mg/L	4mg/L	8mg/L	4mg/L	6mg/L	4gmg/L	6mg/L
Escherichia coli (*E. coli*)	-	18,000 cfu/100ml	76,850 cfu/100ml			Stage 0 onwards: 20,000 cfu/100ml Stage 1 onwards: 2,000 cfu/100ml	Stage 0 onwards: 80,000 cfu/100ml Stage 1 onwards: 10,000 cfu/100ml	Stage 1 onwards: 2,000 cfu/100ml	Stage 1 onwards: 10,000 cfu/100ml

Notes

*Beca (28/04/2021) *Takapau WWTP - Surface Water Assessment of Environmental Effects* (document reference T:D.25), p. 12

NB throughout documents and conditions, some units are presented as mg/L while others are presented as g/L.

As such the recommended wording of Condition 3 is as follows:

During Stage 0 and Stage 1 (see Condition 4 for definition of stages), the consent holder must ensure the treated wastewater meets the following standards prior to discharge to the irrigation and High Rate Land Passage (HRLP):

- *(a) The concentration of Carbonaceous five-day Biochemical Oxygen Demand (BOD_5) must not exceed 40 g/m^3 in more than 8 out of 12 consecutive monthly samples, or 70 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(b) The concentration of Total Suspended Solids (TSS) must not exceed 100 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 155 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(c) The concentration of Ammoniacal Nitrogen (NH_4-N) must not exceed 20 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 30 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(d) The concentration of Dissolved Inorganic Nitrogen (DIN) must not exceed 25 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 35 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(e) The concentration of Dissolved Reactive Phosphorus (DRP) must not exceed 4 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 6 g/m^3 in more than 2 out of 12 consecutive monthly samples; and*
- *(f) The concentration of Escherichia coli (E. coli) must not exceed the following:*
  - *i. Stage 0: 20,000 cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or 80,000 cfu/100 mL in more than 2 out of 12 consecutive monthly samples.*
  - *ii. Stage 1 onwards: 2,000 cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or 10,000 cfu/100 mL in more than 2 out of 12 consecutive monthly samples.*

During Stage 2 (see Condition 4 for definition of stages), the Consent Holder must ensure that the treated wastewater meets the following standards prior to discharge to the irrigation and High Rate Land Passage (HRLP):

- *(g) The concentration of Carbonaceous five-day Biochemical Oxygen Demand (BOD_5) must not exceed 40 g/m^3 in more than 8 out of 12 consecutive monthly samples, or 80 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(h) The concentration of Total Suspended Solids (TSS) must not exceed 100 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 180 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(i) The concentration of Ammoniacal Nitrogen (NH_4-N) must not exceed 20 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 30 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(j) The concentration of Dissolved Inorganic Nitrogen (DIN) must not exceed 25 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 35 g/m^3 in more than 2 out of 12 consecutive monthly samples;*
- *(k) The concentration of Dissolved Reactive Phosphorus (DRP) must not exceed 4 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 6 g/m^3 in more than 2 out of 12 consecutive monthly samples; and*
- *(l) The concentration of Escherichia coli (E. coli) must not exceed 2,000 cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or 10,000 cfu/100 mL in more than 2 out of 12 consecutive monthly samples.*

Condition 5

Minor change to wording to allow for a more enforceable condition.

Condition 6
Minor change of requirement for information provided from six months to 12 months.

Condition 8
Word 'yearly' removed as duplication.

Condition 15
Requirement added that the freeboard level of the new pond is in excess of the 1:100 year rainfall flood level and shall be certified by a Chartered Professional Engineering specialising in civil and flood engineering.

Condition 19
Added wording in for certification of FEMP by the Council (Manager Compliance).

Requirement for the FEMP to be provided to the Council for approval. Updated advice note allowing either one FEMP for the 'whole farm enterprise' or to have two FEMPs which are in accordance with each other

Condition 21
Updated definition of 'properties'.

Condition 25
Reworded condition to allow for certification of signage by Council and to allow for a more enforceable condition.

Condition 26
Reworded condition to allow for a more enforceable condition.

Condition 41
Added following outcome of pre-hearing meeting

Condition 44
Changed wording of soil moisture monitoring requirement for consistency with other conditions of consent.

Condition 46
Specific bores identified and plan added as Appendix 1 of the consent document

Condition 48
Reworded condition to allow for certification of signage by Council and to allow for a more enforceable condition.

Condition 49
Condition offered by applicant originally read:
Three years after the commencement of this consent, the Consent Holder may prepare a review report that seeks to reduce or cease the monitoring required by Condition 37 by way of a variation. This report shall be prepared by a suitably qualified and experienced person and be submitted to Council's Regulatory Manager. The justification shall detail and demonstrate the appropriateness of future monitoring, if any, and take into account the impacts, or lack of, as a result of the Stages implemented in accordance with Condition 4. No change in monitoring shall occur until such time as the Council's Regulatory Manager has agreed to a variation to this consent.

This condition has been removed as the applicant can seek to vary conditions under s127 of the RMA and a consent condition cannot negate or override this right. In seeking s127 variation appropriate justification will need to be provided for the variation as per the wording of this condition. This condition is not considered to serve a planning purpose and has therefore been removed.

Condition 51 and 53
Requirement to undertake freshwater and chlorophyll a monitoring within the first year of the consent commencement, within the fourth year and thereafter every five years to allow for the results to feed into the system review report required by Condition 68

Conditions 54 and 55
Wording in conditions offered by applicant left blank and therefore detail added. A requirement in Condition 54 that if engagement with a suitable expert is not accepted within the first two years, additional efforts are made every two years for the duration of the consent and that records of engagement are kept.

Condition 58
Advice note added that water taken for any reason on site will need to comply with permitted use rights or as part of a consented water take.

Condition 67
(a) and (b) added to ensure ongoing auditing of farm systems is included in annual monitoring report. In addition (d) added to ensure that irrigation infrastructure is operating efficiently (i.e. to ensure the centre pivot is operating as expected).

Condition 75
Requirement (b) added to allow modification to the operational management plan as a result of adverse effects being identified.

Requirement (g) added changes to operational management plan to be adopted to avoid any adverse effects on any new registered drinking water suppliers identified.

Requirement (i) added to allow for ongoing upgrades in understanding of groundwater and the receiving environment and the potential effects of the activity on catchments that the discharge may contribute to.

9. ACTIVITY CLASSIFICATION

9.1 REGIONAL RESOURCE MANAGEMENT PLAN

The proposed activities result in four reasons for consent, as follows:

Authorisation No:	Activity Description	Activity Type:	Activity Status	Relevant Rule (Plan)
AUTH-127077-01 (replacement)	to discharge treated sewage effluent from the Takapau oxidation pond into or onto land (wetland) in circumstances which will result in that contaminant entering water.	Discharge Permit	Discretionary	Rule 52 (RRMP)

AUTH-127078-01 (replacement)	to discharge to air (odour) from the Takapau oxidation pond	Discharge Permit	Discretionary	Rule 28 (RRMP)
AUTH-127079-01 (new consent)	To discharge treated sewage effluent from the Takapau oxidation pond to land	Discharge Permit	Discretionary	Rule 52 (RRMP)
AUTH-127616-01 (new consent)	to operate a farm not complying with permitted activity standards of Rule TT1 or standards of Rule TT2.	Land Use Consent	Non-Complying	Rule TT2A (RRMP)

The applicant has also identified the activities trigger consent under Rule 36 – Existing high discharge volume sewage systems as a restricted discretionary activity. However, the existing discharge to the river does not comply with condition 36(b) given that the discharge is directly into the Makaretu River, as such this will be classified as a discretionary activity under Rule 52.

The applicant has identified that they wish to proceed as a non-complying activity for the production land use consent, even though with the government Overseer review, the non-compliance with standards of rules Rule TT1 or TT2 is not able to be confirmed.

9.2 Relevant National Environmental Standards

Resource Management (National Environmental Standard for Freshwater) Regulations, 2020

The applicant has identified that the farming activities proposed to be carried out on site is pasture for cattle finishing and cropping and therefore have not indicated any activity non-compliance under Part 2 of the NES-F. Any future farming activity will have to comply with the relevant standards of Part 2 of the NES-F.

The proposed discharge and construction work meet the definition of 'specified infrastructure' of the National Policy Statement for Freshwater Management. The applicant provided an ecological assessment of the site to identify any wetlands that fit the definition of 'natural wetland' under the National Environmental Standard for Freshwater (NES-F) or National Policy Statement for Freshwater Management (NPS FM). The applicant's ecologist confirmed that there were no 'natural wetlands' that would trigger consenting requirements under the NES-F.

As such, no consent is required under the NES-F.

Resource Management (National Environmental Standard for Air Quality) Regulations 2004

The National Environmental Standard for Air Quality (NES-AQ) does not apply as the discharges relate to odour rather than another contaminants regulated by the NES-AQ.

9.3 Summary of Consenting Matters

Pursuant to the bundling approach which is applied to overlapping resource consent applications, the most restrictive activity status is applied to the entire proposal. As such, the proposed activity is considered a non-complying activity.

An application made for a non-complying activity, the s104D 'gateway test' must be satisfied. The s104D gateway test is that either the adverse effects of the activity on the environment will be minor

or the activity will not be contrary to the objectives and policies of the relevant plan and any relevant proposed plan. If either of the limbs of the gateway test can be satisfied the consent authority may grant or reduce the consent after considering all the relevant matters in s104(1). If consent is granted, conditions may be imposed in relation to any matter.

10. SECTION 104 ASSESSMENT

When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to the following:

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

(ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and

(b) any relevant provisions of—

i. a national environmental standard:

ii. other regulations:

iii. a national policy statement:

iv. a New Zealand coastal policy statement

v. a regional policy statement or proposed regional policy statement:

vi. a plan or proposed plan; and

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

10.1 S104 MATTERS - ENVIRONMENTAL EFFECTS

The applicant commissioned a number of specialist studies which were submitted in support of the application and assisted in the development of their AEE. These are listed in Section 7, above.

It should be noted that although the existing consents have s124 protection, the applications being assessed here represent a *new* activity and therefore the existing discharges cannot be taken into account when assessing the 'existing environment'. The 'existing environment' includes existing use rights, existing activities carried out under existing consents and resource consents which have been granted where it appears those consents will be implemented[7].

10.1.1 EFFECTS ON TIKANGA (CUSTOMARY MĀORI TRADITIONS AND PRACTISES)

The applicant commissioned a Cultural Impact Assessment (CIA) which was undertaken by Joanne Heperi to represent the Mana Whenua of Takapau. The hāpu are Ngāi Tahu Makakanui (Tahu ki Takapau), Ngāi Toroiwaho, Ngāi Te Kikiri o te Rangi of Te Rongo a Tahu Marae, Ngāi Te Rangitotohu and Ngāti Mārau of Rākautātahi Marae.

The CIA's purpose was to establish potential cultural implications and impacts of the proposed renewal and upgrade of the Takapau wastewater treatment plant and discharge and address concerns or implications on cultural values and on any sites of significance from the proposed activities.

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[7] *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424

The tikanga values specific to the Mana whenua of Takapau and to the relationship Mana whenua have with the Mākāretu Awa and wai (water) more generally are identified through section 3 of the CIA report while section 4 provides an assessment of effects on those identified values. The CIA provides information on tikanga practises and highlights the kaitiaki responsibilities for these resources through past and present generations for future generations ('*Taonga Tuki Iho: Ngā Wai*' section 3.2 of the CIA). Generally, Mana whenua are concerned that the overall health of the awa has declined over time which has resulted in diminishing the mauri of the Mākāretu Awa.

The CIA confirms that the discharge of wastewater to land over discharges to freshwater is preferential as it will help to significantly reduce adverse effects on water quality and achieve water quality outcomes. This approach also aligns with and recognises the importance of water in the Māori world view – "*cleansing water from a Māori perspective required some passage through Papatūānuku*" (section 4.2 of CIA). The CIA also identifies positive effects on cultural values of the proposed activity, the ability to work with the applicant to drive positive change, allows the iwi to protect and care for the mana of the waterways and "*gives confidence to a growing, progressive relationship between Council* [CHBDC] *and Mana whenua*" (section 4.3 of the CIA) contributing to the ability for the Mana whenua to reaffirm the principle or rangatiratanga, develop whanaungatanga with the council and fulfil the roles as Kaitiaki.

Overall, the CIA generally supports the proposed activity and states that the "*proposed change to the discharge system of year round discharge to land as the preferred option for the receiving environment, is a transformational adjustment from discharging to the awa. It aligns with cultural values and is a significant move forward culturally, environmentally, socially and economically*" (section 5.2 of CIA).

The CIA provides a number of recommendations to help avoid, remedy or mitigate adverse effects on cultural values at section 5.2. The applicant has provided a response to the recommendations of the CIA[8] to which the author of the CIA provided additional comments[9], these are explained in detail below:

CIA Recommendations	**Central Hawke's Bay District Council Response (Letter dated 8th July 21)**	**Further Note from CIA Author (Letter dated 10th August 21)**	**Hawke's Bay Regional Council Assessment and Location of Requirement in Conditions Shown in Appendix 1 of this report.**
'*An evaluation at 5 years to ensure that discharge has been totally removed from the wetland and the Mākāretu Awa*'	Explanation that the design of the system is not to completely remove the discharge from the wetland and Mākāretu, offer of a 'system review report' condition every five years to document the ongoing management of the system.	Supports the wording of the conditions suggested.	Condition wording as proposed by the applicant and supported by the author of the CIA has been included in recommended condition 67(c).
"A review after a 10-year period to evaluate any adverse effects of the BPO [best practical option]"	As above, a system review report is proposed every 5 years.	Supports the condition	No further comment
"Engagement between Council and Mana whenua, with Mana whenua as participants involved in processes and decision making, is pivotal to moving smoothly through	Conditions have been included in draft consent conditions to provide an opportunity for mana whenua to be involved with cultural monitoring.	Supports conditions wording	These conditions have been included in the final condition set as Conditions 54, 54 and 56

[8] Letter from Darren de Klerk, dated 8th July 2021 '*Follow up to Takapau Cultural Impact Assessment*'
[9] Letter from Jo Heperi, dated 10th August 2021

consenting issues and endorses continuation of building an effective partnership into the future."			
Riparian planting and restoration of other areas is encouraged for maintaining and enhancing water quality and quality of aquatic habitats	Applicant notes recommendation		This requirement has not been translated into a condition of the current consent as it did not form part of the consent.
Recommendation for the wetland to be cleared of vegetation as it has become congested. *A recommendation for more planting to occur in the wetland of indigenous/native plants particularly Harakeke and other appropriate wetland plants which assist in filtering contaminants.*	Applicant is seeking to upgrade the existing wetland to a high-rate land passage and seeks Mana whenua advice on this.	Supports ongoing discussion and input of Mana whenua with the design and inclusion of plants into the upgrade high rate land passage.	This agreement between Mana whenua is noted but has not been translated into a condition of consent. Although discharge through the high rate land passage forms part of the application, the high rate land passage has not been identified as being a predominant method of specifically treating wastewater, this is done prior to discharge to the high rate land passage. Therefore it is considered that the planting of the high rate land passage can be agreed privately between the applicant and Mana whenua.
Any discharge activity must include a robust monitoring programme that includes regular monitoring of the discharge and the potential effects on the receiving environment.	The proposed conditions of consent include cultural monitoring among other monitoring requirements.	Supports this with potential for future discussions to occur.	See conditions 37-56.
Establishment of a minimum 50m buffer zone between any discharge of contaminants to land activity and the awa, to ensure that surface water quality and groundwater quality are protected.	The design to date uses a pivot irrigator to apply the wastewater to land. The consent conditions propose a 20 m set back (Condition 9). Due to the shape of the land, the majority of the area will have a setback of 50 m and in some cases more.	Agrees that 20m buffer distance is suitable.	NA

In the letter from Jo Heperi, the author of the CIA (dated 10th August 2021), some additional comments are made as follows:

Further Note from CIA Author (Letter dated 10th August 21)	**Hawke's Bay Regional Council Assessment and Location of Requirement in Conditions Shown in Appendix 1 of this report.**
Proposed Condition 60 (GC) *Can you add that Tangata whenua be notified as well and any follow up reports must be sent to the hapū. I would suggest it goes to the Chairperson of Te Rongo o Tahu marae and Rākautātahi marae. If Heretaunga Tamatea Settlement Trust engage an RMA/environmental person for Tamatea they will need notification too.*	This is recognised in conditions 72.

Proposed Condition 61 GC *Accidental Discovery* 1. *Do not remove find/disturb feature.* 2. *Secure site - works to stop within a 20m radius of find.* 3. *Inform - Chairman of: - Te Rongo o Tahu marae, Rākautātahi marae, Te Taiwhenua o Tamatea.* 4. *Potential pre-1900 material. Pre - 1900 archaeloogical site? Notification and archaeological response and archaeological investigation according to standard archaeological practice.* 5. *If pre-1900 Māori material then tikanga Māori processes are implemented as well as issued Archaeological Authority conditions.* 6. *If found to be taonga tūturu, koiwi, then find must be protected and cordoned off until a decision is made regarding appropriate management. Contractor must be informed and work ceases until all statutory and cultural requirements are met. Area of discovery further cordoned off (with fence etc), and protected with a geocloth cover.* 7. *Once decision is made on appropriate cultural management by tangata whenua, the correct processes according to tikanga Māori are carried out by the appropriate people - tangata whenua, archaeologist.* 8. *At completion a notice of clearance is issued so work can recommence, and appropriate people notified.*	This wording has been added to conditions 74.

Overall, the proposed activity represents a significant progressive shift towards a positive outcome for tikanga values. Although the proposed activity will result in some direct discharge of treated wastewater to the Makaretu River, from the CIA, it is clear that the local Mana whenua are supportive of the proposal and therefore it is considered that adverse effects of the proposed activity on tikanga values are **no more than minor**.

10.1.2 EFFECTS ON SOILS

The applicant has provided supporting document to identify the effects of the proposed discharge to land[10]. This identified that the treated wastewater to be irrigated to land will have the following properties of potential environmental concern:

- Organic material (carbonaceous biochemical oxygen demand ($CBOD_5$)
- Cations (sodium, potassium, calcium and magnesium)
- Nitrogen
- Phosphorus

The applicant considers that the mitigation measures outlined below are sufficient to avoid adverse effects to the soils:

- Site selection
- Appropriate application rates (more than 3 times less than the soil unsaturated hydraulic conductivity)
- Managing stock and cropping activities to ensure holding periods to avoid soil damage and maintain adequate vegetative cover
- Withholding irrigation when rainfall or prolonged wetness occurs

Based on the information provided by the applicant and the PDP review[11] it is considered that the adverse effects will be **less than minor**.

[10] Lowe Environmental Impact (LEI) (2021) *Discharge to Land of Takapau Wastewater Assessment of Environmental Effects: Land (LEI, 2021, T:D.10)*, p.28-30

[11] Pattle Delamore Partners (25/05/2021) *Memorandum RE: Takapau WWTP Discharge Consent Review*, p.3

10.1.3 Risk to Stock and Human Food Chain

As part of the application, the applicant offered a 24 hour standdown period used to mitigate the risk of pathogens to stock. Sunlight is a powerful disinfectant; however PDP note[12] that after 24 hours on an overcast or rainy day, there may still be a high pathogen concentrations.

In their response to the further s92 response[13], the applicant provided the references to best practice guidelines which informed the proposed 24-hour standown period. These were New Zealand Guidelines for Utilisation of Sewage Effluent on Land (NZLTC:2000) which recommends 48 hours and the Victorian EPA reclaimed water guidelines which recommends 4 hours. The applicant's proposed 24 hours falls between these two guidelines. From the information provided by the applicant, including the information regarding the proposed UV disinfection, the treated wastewater will exceed all the quality limits for grazing set out by the Victorian EPA, as such it is not considered suitable that this guideline is used to determine the standown period for the Takapau WWTP[14].

During the second pre-hearing meeting the proposed 24 hour stand down was discussed and agreed to a 48 hour stand down period which was agreed by the applicant and is in line with the New Zealand Guidelines for Utilisation of Sewage Effluent on Land (NZLTC:2000). The 48 hour stand down period was considered reasonable by PDP, the processing planner, the applicant and also the District Health Board representative present at the pre hearing meeting of the 13/12/2021.

As such, with the inclusion of Conditions 11 and 12 (shown in Appendix 1 of this report), it is considered the proposed activity will have a **less than minor** effect on the risk to stock and the human food chain.

10.1.4 Effects on Groundwater Quality

The applicant has provided a geologic and hydrogeological assessment by Beca[15] of the proposed activity and the potential impacts of the proposed activity on groundwater. This assessment has found that the groundwater flow in the vicinity of the Takapau Wastewater Treatment Plant (WWTP) are generally in an easterly / south easterly direction. In proximity to the WWTP, the Makaretu River is interpreted to be a losing stream (subsurface flow is from the river to groundwater). The Beca report considers that the Makaretu River and the Source Protection Zone surrounding the Takapau public supply bores are unlikely to be impacted from infiltrated wastewater given the movement of groundwater. The Beca report does not identify any directly downgradient receptors.

The PDP review[16] agrees with the general direction of groundwater flow and that the proposed discharge is unlikely to affect the SPZ, but considers that there should be a further assessment of the potential effects of the activity on downstream waterways including the Porangahau Stream which they consider to be a potential receiving environment for diffuse discharge from the wastewater. In the s92 response, Beca did not agree that the waterways to the east / south east of the site (being the Porangahau Stream) will be the ultimate receiving environment of the contaminants given their interpretation of the underlying geological conditions in the report[17], instead however relying on the theory that the ultimate receiving environment will be in the lower reaches of the Tukituki. Following

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[12] Pattle Delamore Partners (07/09/2021) *Memorandum RE: Takapau WWTP Discharge Consent s92 Response Review,* p.4

[13] Central Hawkes Bay District Council (24/09/2021) *Request for Further Information Takapau Wastewater Discharge APP-126522 – Second Response*, p.4

[14] Pattle Delamore Partners (24/11/2021) *Memorandum RE: Takapau WWTP Discharge Consent Further s92 Response Review,* p.6

[15] Beca, (23/04/2021) *Takapau Wastewater Treatment Plan – Hydrogeological Assessment* (document reference T:B.14)

[16] Pattle Delamore Partners (25/05/2021) *Memorandum RE: Takapau WWTP Discharge Consent Review*, p.5

[17] Beca (20/08/2021) *Letter Re: Takapau WWTP Hydrogeological s92 Response* (document reference T:D.20), p.3-6

the third pre-hearing meeting the applicant provided an assessment of the effects on the Porangahau Stream[18]. The applicant has provided an assessment of effects assuming a 10% contribution from the overall flow of irrigated wastewater to the Porangahau Stream. This indicates a potential 0.07% increase in nitrogen in the Porangahau Stream.

Beca[19] note that some attenuation of nitrogen in the soils will occur which would reduce the loss to groundwater compared to the Overseer values. Likewise, once leached from the agricultural soils, nitrogen may be further attenuated through a process of denitrification if favourable conditions exist in the groundwater systems. Beca further quantified this in their response to the third pre-hearing meeting[20], they consider that the attenuation of nitrogen in soils and groundwater may contribute to reducing the modelled farm loss mass load of nitrogen to the wider Tukituki catchment.

Beca consider that the nitrate-nitrogen is unlikely to impact deep groundwater at concentrations exceeding the limits of Table 5.9.2 of Plan Change 6 given the hydraulic barrier between the deeper strata and surficial groundwater[21]. PDP disagree with this assessment[22] and consider that there is some movement to deeper aquifers and this has implications for meeting the limits in Table 5.9.2. Although PDP note that the relative contribution of this is generally small, the cumulative effects should be considered[23]. To help achieve progression toward the target of improved water quality, PDP recommended[24] that further assessment is given to the proposed land nutrient loading limits proposed by the conditions of consent and that these be set as a maximum discharge per year, rather than a 5-year rolling median as proposed by the applicant. Subsequently, in version 7 of the conditions, the applicant has agreed to lower the nitrogen cap by 20% (from a total of 250 kg/N/ha/year to 200 kg/N/ha/year) (see Condition 8 of Appendix 1 of this report).

Given the reduction of maximum nitrogen loading from 250kg/N/ha/year to 200Kg/N/ha/year, LEI provided an updated assessment of the leaching values for the updated nutrient volumes[25] using OverseerFM. Using the 200kg/N/ha/year maximum limit, the application activities (wastewater irrigation and farming activities) result in 76 kg/N/ha/year loss from the pivot area and 47 kg/N/ha/year an average across the whole site at Stage 2 of the consent[26].

LUC Natural Capital Leaching Rates were intended by the Tukituki Plan to set limits on nitrogen leaching and to assist in achieving the catchment water quality targets. The Land Use Capability has been identified by Section 3.5 of the Land AEE[27] as classes 2 and 3. Natural Capital Leaching Limits for the proposed site are 24.8 – 27.1 kg/N/ha/year as identified by Table 5.9.1D of the RRMP. The proposed leaching is 47 kg/N/ha/year an average across the whole site (updated values using 200kg/N/ha/year maximum limit). And therefore, the proposed leaching on a whole farm basis, is

[18] Beca (22/07/2022) Letter Re: Pre Hearing Meeting Three – Technical Response to Outstanding Matters (document reference: T:D.26)

[19] Beca (23/04/2021) *Takapau Wastewater Treatment Plan – Hydrogeological Assessment* (document reference T:B.14), p.17

[20] Beca (22/07/2022) *Letter Re: Pre Hearing Three – Technical Response to Outstanding Matters* (document reference: T:D.26)

[21] Beca (20/08/2021) *Letter Re: Takapau WWTP Hydrogeological s92 Response* (document reference T:D.20), p.8

[22] Pattle Delamore Partners (07/09/2021) Memorandum Re: Takapau WWTP Discharge Consent s92 Response Review p.8

[23] Pattle Delamore Partners (24/11/2021) *Memorandum Re: Takapau WWTP Discharge Consent Further s92 Response Review,* p.4

[24] PDP (24/11/2021) Ibid, p.4

[25] Lowe Environmental Impact (31/01/2022) *Memorandum Re: Takapau Discharge Property – Nutrient Application and Loss Update* (document reference: T:C.14c)

[26] Lowe Environmental Impact (31/01/2022) Ibid

[27] Lowe Environmental Impact (2021) *Assessment of Environmental Effects: Land (document reference T:D.10),* p.11

more than double the permitted limit set to achieve water quality targets by the Tukituki Plan (52.8% - 57.7% increase depending on the LUC).

It has since been concluded by the Ministry for the Environment (MfE), that there is not enough confidence in Overseer to estimate the volume of nutrient loss and whether nitrogen was being increased or reduced as a result of on farm actions and therefore HBRC are unable to reliably assess whether individual high leachers are exceeding the Land Use Capability Nitrogen (LUC N) allowance based on the limits of the RRMP. Notwithstanding this, the above indicates the relatively high level of leaching from the activities proposed to be carried out on the farm.

The proposed activity represents at least a 10% reduction to the nitrogen load of the catchment[28] (10% was reported when a 250kg/ha nitrogen limit was used and therefore a 200kg/ha nitrogen limit would represent an additional reduction). Although the additional nitrogen that will leach into the groundwater will have an adverse effect on the shallow and potentially deeper groundwater in the vicinity, the applicant has agreed to conditions requiring review of the total nitrogen use on the farm every five years to consistently reduce the nitrogen leaching into groundwater for the life of the consent.

In addition, the applicant has agreed to monitor shallow groundwater bores surrounding the site (see Conditions 46 and 47), these being wells 17053, 17054, 17124, 17125 and 17126 (see Figure 4 below). Condition 47 requires the consent holder to monitor for a number of parameters including a number of nitrogen species.

Wells 17126 and 17025 are directly to the east of the proposed discharge location and while bores 17124 and 17125 are upgradient of the proposed discharge. Unfortunately, there are no other shallow groundwater quality monitoring bores in the vicinity of the site, the closest downstream HBRC groundwater quality monitoring bore being Well 6719 being 3.46km to the south east of the proposed discharge and is 88m in depths. It is considered that this will not provide a useful comparison with the shallow monitoring bores identified in the Figure below. However, it any differences in results from 17126 and 17052 will help identify the flow of contaminants away from the site. Additionally, clause (c) of Condition 75 will allow for review of the monitoring locations if evidence of the current monitoring programme is inadequate. Additionally (i) of Condition 75 will allow nutrient loading to be reassessed if future scientific work identifies that the activity is contributing to an additional catchment.

Overall, it is considered that the proposed activity will have a **no more than minor adverse effect on groundwater**.

[28] Pattle Delamore Partners (25/05/2021) *Memorandum RE: Takapau WWTP Discharge Consent Review*, p.2

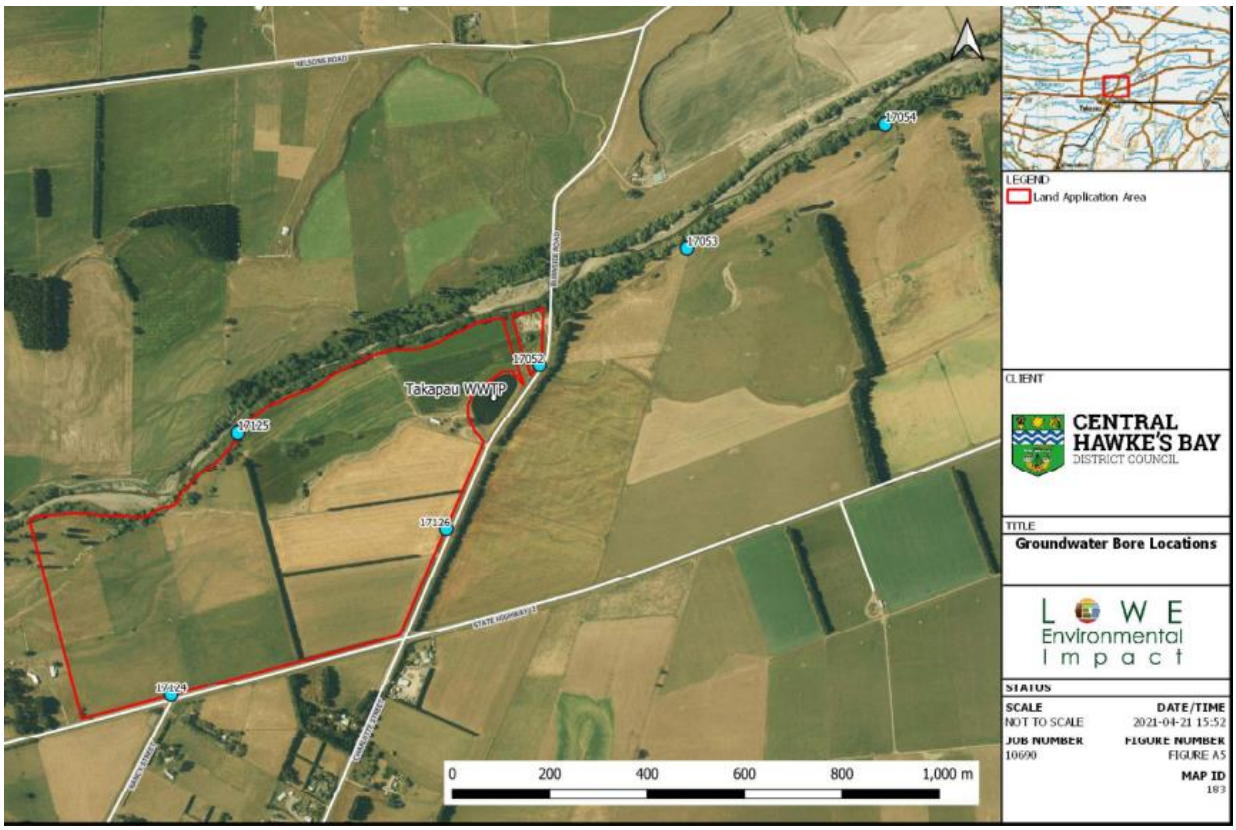

Figure 4: Identified locations of groundwater monitoring bores (Source: LEI)

10.1.4.1 RISK TO OTHER GROUNDWATER USERS

The technical specialists agree that there is unlikely to be a risk to the existing Takapau community supply bore (well number 1762) to the south west of the proposed discharge and irrigation area and this supply bore is upgradient of the activity. However there is potential for existing bores to be located within the area of rural-residential properties to the north of Takapau township and to the south of the state highway.

Well numbers 2136, 3594 (registered for stock water supply) and 5987 are present in the area of rural residential dwellings between Takapau township and the subject site. It is noted that there may be other bores present that are not registered on the HBRC mapping system. The applicant has provided an assessment of the potential impacts on these bores.

Well 2136 is upgradient of the proposed discharge and groundwater flow and therefore the activity is not considered to impact this bore. Well number 3594 is registered for stock water supply while well number 5987 is registered for potable / recreational use. These two bores are associated with rural residential properties and therefore have the potential to supply dwellings. These two bores are directly south of the proposed discharge, so are not considered down gradient by either Beca or PDP. In addition, from the publicly available GIS maps, there appears to be Central Hawke's Bay reticulated services in the vicinity of the site and CHBDC have confirmed that potable water is supplied to all the rural residential properties between the site of discharge and Takapau. Therefore, it is considered that the effects on these rural residential properties are less minor in nature given the direction of groundwater flow away from these existing bores.

PDP recognise the nearest down gradient bore is 4838. When consent was sought for this bore in 2002, the use was registered for irrigation (AUTH-112405-01) and there is not currently a water take consent associated with this bore. In terms of the effect on drinking water at this bore, PDP consider

that the conclusions reached by the applicant in regard to drinking water that the effect on down gradient drinking water supplies is reasonable[29].

Given the above assessment, it is considered that the impact of the proposed activity on other groundwater users is **no more than minor**.

10.1.5 EFFECTS ON SURFACE WATER QUALITY

The proposed approach will result in a reduction of contaminants (particularly phosphorus) entering the Makaretu River and therefore is considered to have a positive effect on surface water quality in the immediate area and immediately downstream of the discharge location. As described in detail above in Section 8 (comment on conditions) of this report, the applicant has sought to increase the concentration of a number of discharge quality parameters compared to what is existing / what has been recorded as being discharged in monitoring of the previous consent. They argue that given the discharge will predominantly be to land and when the discharge is to water, it is at higher flows, the effects of increased discharge quality parameters will result in a less than minor effect. As described above, generally the reporting officer agrees with the conclusion at Stage 2 of the consent, particularly given the updated surface water assessment from Beca following the third pre-hearing meeting[30]. however not for Stage 0 or Stage 1, where the restrictions on the discharge to the river are not as stringent.

As such, the reporting officer has recommended different discharge parameters for Stage 0 and 1 that have been agreed with the applicant. Although these discharge limits agreed with the applicant are increased compared to the existing monitoring data available for the discharge, Stages 0 – 1 represent only the first five years of the consent. Therefore, although noted by PDP[31] that these limits have not been assessed by the applicant, the quality of the discharge is not proposed to change from existing – apart from to increase in quality given the additional filtration and UV and any adverse impact on the surface water as a result of these discharge quality limits at Stages 0 – 1 will be temporary in nature.

An updated surface water effects assessment[32] has been provided for the Stage 2 limits for median flow and 3 x median river flow regimes. The proposed conditions restrict effluent being discharged to surface water at below median flow and ensure discharge to land is prioritised over discharge to water. As such the Beca report concluded that potential adverse effects of discharging to surface water at either median or 3 x median flow in the concentrations allowed by the Stage 2 discharge quality standards are either negligible or low. PDP have reviewed this and concluded that although the criteria used in the Beca assessment is inconsistent, the method of assessment is considered appropriate.

Ongoing monitoring of surface water has been included as recommended conditions of consent as well as review clauses to allow for an adaptive management approach if it is found that these discharge quality parameters are resulting in environmental effects above and beyond what was expected.

Phosphorus loss from the wastewater application to land will be via erosion and overland flow rather than leaching as it binds readily with the soil rather than water[33]. The applicant has agreed to appropriate conditions of consent to limit overland flow via limits of application volumes to restrict

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[29] Pattle Delamore Partners (07/09/2021) *Memorandum RE: Takapau WWTP Discharge Consent s92 Response Review*, p.7.
[30] Beca (22/07/2022) *Letter Re: Pre Hearing Three – Technical Response to Outstanding Matters* (document reference: T:D.26)
[31] PDP (22nd August 2022) *Memorandum RE: Takapau WWTP Discharge Consent Further Information Review*
[32] Beca (22/07/2022) *Letter Re: Pre Hearing Three – Technical Response to Outstanding Matters* (document reference: T:D.26)
[33] Beca (23/04/2021) *Takapau Wastewater Treatment Plan – Hydrogeological Assessment* (document reference T:B.14), p.18

ponding and runoff (see conditions 7 and 13). As such the effect of the increased application of phosphorus to the irrigated area on surface water is considered to be less than minor.

However, PDP consider that the ultimate receiving environment for the contaminants discharged to land and which will migrate within the groundwater are other surface water bodies within the Tukituki catchment[34]. Part of the s92 request to the applicant was to assess the ultimate receiving environment of these contaminants within other surface water bodies. The applicant provided an assessment of the impact on the Porangahau Stream following the third pre-hearing meeting[35].

The applicant has identified that the existing discharge is responsible for approximately 0.39% of the total nitrogen load in the Tukituki River at Tapairu Road[36]. The applicant notes that the Makaretu River is currently not exceeding the dissolved inorganic nitrogen (DIN) limit of 0.8 mg/L and dissolved reactive phosphorus (DRP) limit of 0.015 mg/L and this therefore justifies the relatively small decrease in overall nitrogen leaching from the site when compared to the existing activities. However, the Upper Tukituki Corridor which is directly downstream of the proposed activity is currently exceeding the DIN and DRP limits, which the activities in the Makaretu River catchment will be directly contributing towards. The applicant's assessment of impacts on the Porangahau Stream assumed a 10% contribution of the irrigated flows from the wastewater treatment plant to the Porangahau catchment and when compared to the baseline scenario, the relative mass load contribution of the activity in stage two to the total nitrogen mass load in the Porangahau increases by 0.07%[37]. Therefore, the overall effect of the proposed discharge to the Porangahau Stream is deemed to be negligible by the applicant. PDP reviewed[38] this information and considered that a worse case scenario with 100% contribution of the activity would result in a potential 0.7% increase in mass loading of nitrogen at the Porangahau. It is not clear how the applicant selected the 10% contribution, other than a discussion identifying that they do not consider the groundwater to flow in the direction of the Porangahau Stream and therefore a 10% contribution is considered conservative by the applicant. PDP agree that the potential increase of the activity on the mass loading of the Porangahau Stream is relatively small but note that this increase within the Porangahau catchment will not help the Porangahau Stream reduce its instream DIN concentration to below the Tukituki Catchment Plan limit of 0.8mg/kg.

Although, PDP and the reporting officer generally agree with the applicant that the effects of the proposed activity on the Makaretu River will be positive compared with the previously consented activity, measures should be implemented to ensure that the proposed activity will not solve one issue by causing another issue. Ongoing requirements for the applicant to reduce nitrogen inputs across the area of wastewater irrigation is recommended as a condition of consent to ensure that a form of adaptive management is carried out on the site, ensuring the applicant (CHBDC) have ongoing discussions with the farm owner / manager to ensure the best industrial practises are engaged to mitigate environmental effects, particularly in regard to potential locations of diffuse discharge. See requirement for applicant to update FEMP yearly in Condition 20 of Appendix 1 of this report.

Given that the impact from the activity itself will be relatively small compared to the cumulative impact of the activities across the wider environment, given the beneficial impact on the Makaretu

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[34] Pattle Delamore Partners (25/05/2021) *Memorandum RE: Takapau WWTP Discharge Consent Review*, p.5-7

[34] Pattle Delamore Partners (07/09/2021) *Memorandum RE: Takapau WWTP Discharge Consent s92 Response Review,* p.6.

[35] Beca (22/07/2022) *Letter Re: Pre-Hearing Meeting Three – Technical Response to Outstanding Matters* (document reference T:D.26)

[36] Beca (28/04/2021) Takapau WWTP – Surface Water Assessment of Environmental Effects (document reference T:D.25), p.40

[37] Beca (22/07/2022) *Letter Re: Pre-Hearing Meeting Three – Technical Response to Outstanding Matters* (document reference T:D.26) p 16

[38] PDP (22nd August 2022) *Memorandum RE: Takapau WWTP Discharge Consent Further Information Review*

River, and given the monitoring and opportunity for adaptive management and review it is considered that the activity will have a **minor adverse impact on surface water quality**.

10.1.6 EFFECTS ON TERRESTRIAL ECOLOGY

An ecological impact assessment was undertaken by Beca[39] submitted to provide additional understanding of the aquatic receiving environments as a response to s92 request. This has been peer reviewed by PDP and PDP found that the methodology and EIANZ assessment approaches taken by Beca are suitable.

The existing overland flow path (high rate land passage), located on Lot 3 DP 9943 which currently discharges the wastewater from the treatment pond to the Makaretu River is categorised by Beca as a constructed wetland of 331m^2 with low ecological value and which is sustained by the discharge of wastewater from the existing wastewater pond. As such, it does not meet the National Policy Statement for Freshwater Management, 2020 (NPS-FM) definition of a 'natural wetland' and the ecological assessment does not consider that the proposed activity resulting in a change in the discharge regime via the constructed wetland will result in a detrimental effects, even if the constructed wetland were to dry up as a result of the change in discharge.

The ephemeral wetland of approximately 319m^{2}and ephemeral overland flow path (sites 2 and 3 in the Beca ecological impact assessment, respectively) are located on Part Lot 1 DP 15623 at the toe of the terrace which bisects the irrigation area and have a combined area. This area was also assessed by the Beca assessment as having low ecological value. In a further clarification email from Beca[40], the ecologist did not consider this are meets the National Policy Statement for Freshwater Management, 2020 (NPS-FM) of a 'natural wetland'. Site 2, the ephemeral wetland, is considered a constructed wetland given the site characteristics, historic aerials and anecdotal evidence from the land owner. Site 3, the ephemeral flow path, is not considered a wetland given the lack of wetland hydrology observed on site and the fact that the vegetation is dominated by exotic pasture species. Therefore the discharge of wastewater over this area does not require consent under the National Environmental Standard for Freshwater, 2020 (NES-F).

This ephemeral flow path is not identified as being connected to the Makaretu River and appears to be draining within the area of the site therefore although it may act as a critical source area (runoff accumulating in high concentration), it is not considered that this will act as a conduit for sediment and nutrients to the wider environment.

Site 2 is identified by Beca as having low ecological value and Site 3 is identified as having very low ecological value based on low ratings for representativeness, rarity and distinctiveness, diversity and pattern, and ecological context. Potential effects from the discharge of treated wastewater on these two areas include alterations to hydrology and degradation of water and habitat quality. Beca consider that the discharge of treated wastewater at these sites will cause a no more than minimal shift away from existing baseline conditions to the hydrology at these sites and will therefore have a low magnitude of effect. Likewise, Beca consider that the changes in nutrient inputs to sites 2 and 3 will cause a minor shift away from existing baseline conditions and will therefore have a low magnitude of effects.

Given the Beca assessment summarised above and the PDP review of this assessment, the ecological value of these sites is considered low and very low respectively and the magnitude of effect on both

[39] Beca (19/08/2021) *Takapau Wastewater Discharge to Land – Freshwater Ecological Impact Assessment s92 Response* (document reference: T:D.66)

[40] Beca (24/09/2021) Email from Garret Hall to Hamish Lowe RE: *FWD: Takapau – Second s92 response*

sites is considered low. As such it is considered the overall **effect on terrestrial ecology is less than minor.**

10.1.7 EFFECTS ON AIR QUALITY

The AEE includes an assessment on the effects of the proposed activity on air quality and the discharge to air was also considered in Appendix G of the application[41]. The existing oxidation pond is 2km to the north of Takapau township and no dwellings are located within 400m of the plant boundaries while the nearest dwelling to the edge of the irrigation area is 120m away.

The applicant has identified that the odour from treated wastewater is generally low in intensity and if odours are apparent, this indicates a significant process failure. The applicant identifies that ongoing management is required to ensure anaerobic conditions do not occur including sludge management.

The additional wastewater storage pond that is proposed as part of the application is identified as being a low risk of odour due to the turnover of wastewater, natural aeration of the surface and relatively low strength of treated wastewater.

When irrigated in an aerobic state, the wastewater will have minimal odour however if wastewater was to sit in the irrigation lines for a long period of time it may become anaerobic. If anaerobic conditions were to occur, the applicant proposes flushing the lines with clean water to mitigate any odour created by the anaerobic conditions (the farmer, Drummond, currently holds a resource consent to take surface water from the Makaretu River and irrigate the area of the discharge – AUTH-125346-01).

This requirement is identified in operational management plan required by Condition 58 (h) and(q) and 63(g) as shown in Appendix 1 of this report. It is acknowledged that the frequency lines are flushed will need to vary depending on season etc. and can be appropriately managed via the ongoing management plan required by Condition 58. In addition, the applicant has identified that an area on the lower terrace will be selected for irrigation to re-occur if septicity in the lines develops, this will allow a maximum separation distance to the nearest residential receptor. This is specified by requirement (h) in Condition 58.

The applicant has also proposed UV, or similar, to reduce pathogen levels (see Condition 5) and adopting separation distances (see Condition 10) and automatic shutdowns of irrigation system when the wind reaches certain speeds (see Condition 24).

With the adoption of the conditions proposed and agreed by the applicant, it is considered that **the effects of odour from air discharges from the normal operation of the plant, ponds and irrigation system will be less than minor**.

10.1.8 EFFECTS ON NATURAL HAZARDS

The applicant has identified that the proposed activities do not have an impact on natural hazards, however natural hazards may have an impact on the activities. The most significant of these natural hazards is flooding which may cause inundation of the irrigated area and the additional pond storage area.

The applicant has proposed the additional pond to be bunded in a similar manner to the existing pond, however has declined to provide any detailed design of this but pointed out the detail on the flood extent was provided with the application. The location of the proposed additional effluent pond is within the 1:100 year flood plain. It is considered that the pond can be designed to ensure that it can

[41] Lowe Environmental Impact (2021) *Assessment of Environmental Effects: Land* (document reference T:D.10), p.31-33

withstand flooding events and a requirement has been added to Condition 15(c) that the pond be designed with the freeboard to be in excess of the 1:100 year flood event as certified by a Chartered Professional Engineer.

Overall, it is considered that **effects from natural hazards are less than minor**.

10.1.9 Positive Effects

The proposal provides for the communal treatment of the Takapau towns wastewater and allows for projected growth to occur at Takapau. The proposal also represents a reduction in the volume of wastewater discharged to Makeratu River to 10% of the current volume and will be restricted to higher flows to reduce adverse environmental effects. This will result in a reduction in contaminants (in particular phosphorus and nitrogen) entering the Makaretu River, improving the quality and health of instream ecosystems.

The proposal represents a sustainable attitude to wastewater as it treats the wastewater as a resource allowing the water and nutrient to be utilised for agriculture production. This will allow some reduction in the addition of other fertilisers to the land for plant and crop growth and thereby representing a better use of an existing resource that is available in wastewater.

Lastly, as identified throughout the application documents, and particularly the Best Practical Option Report[42], the community has a strong desire for the removal and/or reduction of wastewater flows into the Makaretu River. The applicant has undertaken significant consultation throughout the process and aimed to provide an affordable system which meets the desires of the community.

11. S104 Matters: Policy Context and Evaluation

11.1 National Legislation

11.1.1 National Policy Statement for Freshwater Management, 2020 (NPSFM)

The NPSFM has the objective of ensuring that natural and physical resources are managed in a way that prioritises the health and well-being of water bodies and freshwater ecosystems, the health needs of people, and the ability of people and communities to provide for their social, economic and cultural well-being.

The document came into effect on the 3rd September 2020 and provides an updated direction on how we should manage freshwater.

The applicant has provided an assessment of the proposed application against the relevant policies of the NPSFM including objective 1 and policies 1-3, 6-13 and 15. Overall the applicant considers[43] that the engagement of the community and iwi that has occurred throughout the process has allowed tangata whenua to be actively involved in decision making and recognised the tikanga values of freshwater as well as removal of a large quantity of wastewater from a river discharge to a land discharge will go a long way to give effect to Te Mana o te Wai.

Policy 3 states that '*freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including effects on the receiving*

[42] Lowe Environmental Impact (2020) *Takapau Wastewater Treatment Discharge Best Practicable Option Report* (document reference T:C.12),

[43] Beca (2/04/2021) *Statutory Rules and Evaluation – Takapau Wastewater Treatment Plant (*document reference T:D.90b). p.5-8

environment'. The applicant considers that both discharges (land based and water based via the high rate land passage) will result in a less than minor environmental effect on the receiving environment[44] and therefore the application is consistent with Policy 3. As discussed above, given the fact that PDP consider that the Porangahau Stream could be a potential receiving environment for diffuse discharge and that the groundwater underlying the site is already exceeding the RRMP Plan Change 6 limits. As such, this report has considered that the potential effects on the groundwater and surface water resources, including cumulative effects on the whole Tukituki catchment, are minor rather than less than minor. However, generally it is considered that the proposal is consistent with Policy 3 of the NPSFM.

The applicant did not provide an assessment on Policy 5, which states '*Freshwater is managed through a National Objectives Framework to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained and (if communities choose) improved*'.

The information provided by the applicant[45]indicates the existing discharge is not having an environmentally meaningful effect on macroinvertebrate communities or levels of periphyton in the Makaretu River and it is expected that, when compared to the existing discharge, the proposed activities which will reduce the direct river discharge will have a positive effect on the health and wellbeing of the Makaretu River.

The applicant has provided an assessment of the potential effect of the activity on the Porangahau Stream which assumed that 10% of the flow from the WWTP irrigated farmland may end up in the Porangahau Stream and found that the total nitrogen mass load in the Porangahau increases by 0.07%. Therefore, the applicant considered that the overall effect of the proposed on the Porangahau Stream is deemed to be negligible[46]. PDP note that using the Beca figures, if 100% of the flow from the WWTP irrigated farmland ended up in the Porangahau Stream, the increase in mass loading on the Porangahau from the activity would be 0.7%. It is not clear how the applicant determined that 10% of the flow from the WWTP irrigated farmland may end up in the Porangahau, but in a worst case scenario (of 100% irrigated flow ending up in the Porangahau) of 0.7% although is not substantial in itself, results in an increase nutrient loading of an already degraded waterbody.

The Porangahau Stream is already a degraded waterbody (i.e. the catchment is already exceeding a number of freshwater targets under Plan Change 6). Therefore, if the proposed activity is not positively contributing to the existing degraded water body of the Porangahau Stream, it cannot be considered wholly consistent with Policy 5 of the NPS-FM. This must be balanced against the positive effects of the removal of the direct discharge from the Makaretu and scale of the effect on the Porangahau Stream which PDP agree with the applicant that it is to be relatively small (even if 100% of the irrigated wastewater flows ended up in the Porangahau, the increase in mass loading of nitrogen would by 0.7%)[47]. As such, although this aspect of the proposal is not completely consistent with Policy 5 of the NPSFM, it is not opposed to the nature the intent of Policy 5 of the NPS-FM.

In conclusion, it is considered that the proposal is generally consistent with the objectives and policies of the NPSFM because it recognises the tikanga values of freshwater and seeks to improve the quality of surface water in the catchment.

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[44] Ibid. p.7

[45] Beca (28/04/2021) *Takapau WWTP – Surface Water Effects Assessment of Environmental Effec*ts (document reference: T:D.25), p.51

[46] Beca (22/07/2022) *Letter Re: Pre-Hearing Meeting Three: Technical Response to Outstanding Matters* (Document reference: T:D.26), pp 15-16

[47] PDP (22nd August 2022) *Memorandum RE: Takapau WWTP Discharge Consent Further Information Review*

11.1.2 Resource Management (National Environmental Standard for Freshwater Regulations 2020 (NES-F)

As above, the applicant has identified that the farming activities proposed to be carried out on site is pasture for cattle finishing and cropping and therefore have not indicated any activity non-compliance under Part 2 of the NES-F. Any future farming activity will have to comply with the relevant standards of Part 2 of the NES-F.

The proposed discharge and construction work meet the definition of 'specified infrastructure' of the National Policy Statement for Freshwater Management. The applicant provided an ecological assessment of the site to identify any wetlands that fit the definition of 'natural wetland' under the National Environmental Standard for Freshwater (NES-F) or National Policy Statement for Freshwater Management (NPS FM). The applicant's ecologist confirmed that there were no 'natural wetlands' that would trigger consenting requirements under the NES-F.

11.1.3 Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations, 2007 (NES-DW)

The NES-DW regulates activities that may contaminate sources of human drinking water from contaminants like microorganisms, which can pose a risk to human health if they enter human drinking water. The NES-DW required consenting authorities to ensure that the effects of activities on drinking water sources are considered in decisions on resource consents, particularly water permits and discharge permits.

Regulations 7 and 8 of the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 (NES) apply to water and discharge permits issued by regional councils. Regulation 7 states that regional councils cannot grant water permits or discharge permits if they are likely to –

(a) Introduce or increase the concentration of any determinands in the drinking water, so that, after existing treatment, it no longer meets the health quality criteria; or
(b) introduce or increase the concentration of any aesthetic determinands in the drinking water so that, after existing treatment, it contains aesthetic determinands at values exceeding the guideline values.

Regulation 8 applies to discharge and water permits that will occur upstream of an abstraction point where water is not tested or does not meet the health quality criteria.

The hydrological assessment report[48] noted that the nearest registered source of drinking water is the Takapau public supply bore (Meta Street Bore, well no. 1762) approximately 1,125m to the south of the proposed discharge, at the closest point and the source protection zone (SPZ) for this bore approximately 1.1km south west of the proposed WWTP. Beca and PDP agree that the Takapau public supply bore is upgradient of the proposed discharge and therefore the proposed discharge is not expected to effect the Source Protection Zone of this supply. This proposal is not likely to introduce or increase the concentration of any determinands (including aesthetic determinands) in the drinking water at this registered water supply due to the direction of groundwater flow.

The next closest downstream bore is the Takapau Road Bore, the Waipukurau public supply bore approximately 14 km east of the proposed discharge. Central Hawke's Bay District Council confirmed

[48] Beca (23/04/2021) *Takapau Wastewater Treatment Plant – Hydrogeological Assessment* (document reference T:B.14)

that from experience monitoring the water from the Takapau Road Bore, that the existing discharge is not considered to have a detrimental effect on this drinking water supply[49]. Given the existing discharge is not known to impact the Waipukurau public supply bore, it is considered that the proposed activity will also not impact this bore. The activity results in less wastewater discharged to the Makaretu River and only discharged during higher flow conditions (depending on the stage of the consent). This proposal is not likely to introduce or increase the concentration of any determinands (including aesthetic determinands) in the drinking water at this registered drinking water supply due to the separation distance between the activity and the existing discharge representing a worse case scenario than the proposed activity and not resulting in any known impacts at this drinking water supply.

Regulation 12 only applies to an activity that has the potential to affect a registered drinking-water supply that provides no fewer than 25 people with drinking water for not less than 60 days each calendar year. As there is a registered drinking water supply (the Takapau Bore) of this nature within approximately 1,125 m from the proposed discharge, a condition of consent under Regulation 12 is recommended. While unlikely given the above assessment, this will ensure the operators of this supply are notified if an event occurs that may have a significant adverse effect on the quality of the water at this abstraction point.

RMA s104G was inserted in November 2021 and requires that regard must be given to any drinking water supply that is registered under s 55 of the Water Services Act (WSA) 2021, and risks that are identified in a source water risk management plan. At this time no drinking water supplies are registered in this area under the WSA 2021.

11.2 LOCAL LEGISLATION

11.2.1 HAWKES BAY REGIONAL POLICY STATEMENT

This Regional Policy Statement (RPS) is incorporated in the Hawke's Bay Regional Resource Management Plan, which became operative in 2006. The Regional Policy Statement comprises Chapters 1 to 4 of the overall plan with Chapters 2 and 3 setting out the main objectives and policies. Chapter 4 however recognises non-regulatory methods of achieving the objectives including information and education.

The applicant has undertaken a thorough assessment of the proposed activities against the relevant policies of the RPS in the Beca planning assessment[50]. However, given the additional reviews undertaken and iterations made to the proposal through the processing of the consent, public notification and subsequent pre-hearing meetings, it is considered relevant to undertake a full assessment of the relevant objectives and policies of the RSP to identify where a difference of opinion from the Beca assessment is identified and to add any points considered relevant.

The relevant objectives and policies are outlined and discussed in relation to the proposed activity below.

Objective and Policies

OBJ LW1 Integrated management of fresh water and land use development

> *Fresh water and the effects of land use and development are managed in an integrated and sustainable manner which includes:*
>
> *…*

[49] Discussed during pre-hearing meeting (18/12/2022), p.3

[50] Beca (28 April 2021) *Statutory Rules and Evaluation – Takapau Wastewater Treatment Plant (*document reference T:D.90b).

4. Safeguarding the life-supporting capacity and ecosystem processes of freshwater, including indigenous species and their associated freshwater ecosystems
…
14. Promoting the preservation of the natural character of the coastal environment, and rivers, lakes and wetlands, and their protection from inappropriate subdivision, use and development.

The applicant has identified that the proposal represents a staged approach to improving and preserving the surface water quality of the Makaretu River by translating the treated wastewater flows to land. The comment of the applicant is generally agreed with in terms of the immediate impacts on the Makaretu River and the beneficial impacts the removal of much of the wastewater stream from the Makaretu River will have on the ecosystem processes of this freshwater system. The applicant considers that the proposed development will not be inappropriate and is likely to improve the natural character of the Makaretu River.

It is generally agreed with that the proposal will improve the state of the Makaretu River by removing much of the direct discharge and limiting the discharge to higher flow events (depending on the stage). However, it is noted that the discharge of the wastewater into the Makaretu River is authorised by a lapsed consent which has s124 protection. The discharge of wastewater into the Makaretu does therefore not form part of the existing environment[51]. As such, the *improvement* of the proposed activity in terms of environmental effects when compared to the previously consented activity is not a statutory consideration. Therefore, the assessment of the renewal the discharge to air and water consents and new discharge to land and land use consents shall be treated as a new activity, not a continuation of an existing activity.

The proposed activities results in a split of the wastewater whereby some is discharged to the river during median and higher flow events. The benefit of additional storage at stage 2 and the ability to discharge wastewater to land means that discharge of wastewater into the river can be limited to occur at these higher flow periods mean that the wastewater is diluted to a higher degree within the river[52]. This thereby results in a proposal that is generally consistent with the protection of the freshwater ecosystem.

The applicant has focused on the evidence of the individual effects of the activity and PDP and Beca agree that the downstream individual effects are small, PDP has concerns about the cumulative effect on downstream waterbodies. Overall, the applicant has identified that the proposed activity will result in a 10% decrease in total nitrogen load contribution however will result in an increase of up to 0.7% mass loading of nitrogen in the Porangahau catchment. The agreement for the maximum nitrogen limit to be reduced from 250kg/N/ha/year to 200kg/N/ha/year will further reduce the total nitrogen load contribution. In addition, the 'sunset' clause of condition 8 will allow ongoing reductions of this as the system and farm management 'beds in'. Overall, although the proposed activity may result in some additional effects not envisioned by the application documents, the proposal seeks to support the life supporting capacity of the freshwater ecosystems **in accordance with OBJ LW1**.

OBJ LW2 Integrated management of fresh water and land use development

The management of land use and freshwater use that recognises and balances the multiple competing values and uses of those resources within catchments. Where significant conflict

[51] 'Existing environment' in this context meaning activities with existing use rights, existing activities carried out under existing consents and resource consents which have been granted where it appears those consents will be implemented. *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424
[52] Beca (28/04/2021) *Takapau WWTP – Surface Water Assessment of Environmental Effects* (document reference: T:D.25), p.49

between competing values or uses exists or it is foreseeable, the regional policy statement and regional plans provide clear priorities for the protection and use of those freshwater resources.

The proposal reflects competing values within the area – the increased focus on the impact agricultural activity has on freshwater; the increased demand from rate payers for municipal discharges to be managed effectively and in a way which is sensitive environmentally and culturally; the demand for water in a water scarce area, and; increased understanding of the interconnectivity of groundwater and freshwater. Overall, it is considered that the application represents an integrated use of freshwater and that it will generally be **consistent with OBJ LW2**.

OBJ LW3 Tangata whenua values in management of land use and development and freshwater

Tangata whenua values are integrated in the management of freshwater and land use and development including:

a) Recognising the mana of hapu, whanau and iwi when establishing freshwater values; and
b) Recognising the cumulative effects of land use on the coastal environment as recognised through the Ki uta ki Tai (the maintains to the sea) philosophy; and
c) Recognising and providing for wairuatanga and the mauri of freshwater bodies in accordance with the values and principles expressed in Chapter 1.6, Schedule 1 and the objectives and policies in Chapter 3.14 of this Plan; and
d) Recognising in particular the significance of indegenious aquatic flora and fauna to tangata whenua

As specified in the Plan's explanation of these objectives, the predominant view of Māori in Hawke's Bay is that water is essential; a priceless treasure left by ancestors for their descendant's life sustaining use.

The application states that the proposed move from the discharge to the Makaretu River to a more land based discharge was a result of community consultation which identified that the iwi and the wider community desired the discharge into the Makaretu to cease. The applicant has commissioned a Cultural Impact Assessment (CIA)[53], this in addition with the stepwise progression of removing much of the discharge into the Makaretu illustrates the integrated approach that the applicant has taken for recognising the mana of local hāpu and tangata whenua values. Although it is noted that the proposed activity does not result in the discharge of wastewater into the Makaretu ceasing completely, it appears that this has been made clear to the author of the CIA[54] and that the proposed activity is preferred over the previously consented activity continuing by the author of the CIA. This demonstrates the applicant's willingness to adopt tangata whenua values in the management of land use and development and is **consistent with OBJ LW3**.

POL LW1 – Catchment-based integrated management

1. Adopt an integrated management approach to freshwater and the effects of land use and development within each catchment area, that:
   b. Provides for mātauranga a hapū and local tikanga values and uses of the catchment
   c. Provides for the inter-connected nature of natural resources within the catchment area
   cA. ...

[53] Joanne Heperi (April 2021) *Cultural Impact Assessment: In relation to an application for renewal of resource consents for Takapau Wastewater Treatment Plant* (document ref: T:D.50)
[54] Central Hawke's Bay District Council (08/07/2021) *Letter to Joanne Heperi RE: Follow Up to Takapau Cultural Impact Assessment*

cB. Recognises and manages the co-exisitng values of wetland habitat and agricultural production

d. ...

dA. ...

e. Promotes collaboration and information sharing between relevant management agencies, iwi, land owners and other stakeholders

f. Takes a strategic long term planning outlook of at least 50 years to consider the future state, values and uses of water resources for future generations

g. Aims to meet the differing demand and pressures on, and values and uses of, freshwater resource to the extent possible

gA. ...

h. ...

i. ...

IC. ...

iD. ...

iE. Recognises and provides for existing use and investment

j. ...

k. Enables water storage infrastructure where it can provide increased water availability and security for water users while avoiding, remedying and mitigating adverse effects on freshwater values.

On balance, it is considered the application is **consistent with the provisions of POL LW1(1).** Particularly those regarding the involvement of tikanga values in management (POL LW1(1)(b) and (e)). In addition, the proposed works have been planned by the applicant for a long term strategic view and recognises the existing infrastructure at the site (the existing WWTP) and provides for onsite storage of wastewater to be reused in a sustainable way on site to go some way to mitigating water quantity issues in a water scarce environment.

POL LW2 – Prioritising Values

Policy LW2(1A) identifies that Pol LW2 applies when considering resource consents for activities in the catchments specified when no catchment based plan has been prepared. As a catchment based plan for the Tukituki Catchment has been prepared and is assessed in the following sections, assessment of the activity against the priority values of POL LW2 is not considered necessary.

POL LW3 – Managing the effects of Land Use

1. To manage the effects of the use of, and discharges from, land so that

a. The loss of nitrogen to groundwater and surface water, does not cause catchment area of sub catchment limits for nitrogen set out in regional plans to be exceeded.

b. ...

c. The loss of phosphorus from production land into ground or surface water does not cause limits set out in regional plans to be exceeded.

As discussed in detail in the preceding and following sections, it is not considered that the activity will cause the loss of phosphorus into ground or surface water to exceed the limits set out in Table 5.9.1B and therefore it is considered the application activities are consistent with POL LW3(1)(c).

However, from baseline monitoring it is understood that the area surrounding the site is already exceeding the nitrate nitrogen limit outlined by Table 5.9.2 and the activity will result in more nitrate nitrogen being leached into the groundwater.

The activity will have a positive effect in a decrease in nitrogen being discharged into the Makaratu River thereby helping this sub catchment maintain the fact it is not exceeding the limits set out in

Table 5.9.1B. However, the resulting increased discharge of nitrogen into groundwater is considered to potentially impact other sub catchments within the Tukituki by way of diffuse discharge. The Porangahau catchment has been identified by PDP[55] as a potential receiving environment for the diffuse discharge, and Beca have provided an assessment where if 10% of the flows from the irrigated wastewater end up in the Porangahau Stream, an increase in mass loading of nitrogen in the Porangahau will increase marginally (by 0.07%%)[56]. The Porangahau Stream is already exceeding its dissolved inorganic nitrogen limit (DIN) as set out in Table 5.9.1B. Although this contribution of nitrogen is relatively small and considered no more than minor in the assessment of environmental impacts in Sections 10.1.4 and 10.1.5 of this report, the cumulative impact cannot be ignored[57]. As such, it is considered that if the activity is contributing in any small way to the exceedance of the limits outlined in the RRMP, the activity is **not consistent with POL LW3(1)(a).**

OBJ UD5 – Ensure through long-term planning for land use change throughout the Regional, that the rate and location of development is integrated with the provision of strategic and other infrastructure, the provision of services and associated funding mechanisms.

POL UD13 – Within the region, territorial authorities shall ensure development is appropriately and efficiently serviced for the collection, treatment, disposal and reuse of sewage and stormwater and the provision of potable water by:

- **a) Avoiding development which will not be serviced in a timely manner to avoid or mitigate adverse effects on the environment and human health**
- **b) Requiring these services to be designed, built, managed or upgraded to maximise their ongoing effectiveness.**

The applicant has provided information of their ongoing wastewater strategy and long term plans for the region following community consultation. They have adopted population growth models to help understand the development of their towns to feed into the design of services including wastewater. This has fed into the design of the application currently being processed. Overall it is considered that the application is **consistent with OBJ UD5 and POL UD13**.

OBJ 15 – The preservation and enhancement of remaining areas of significant indigenous vegetation, significant habitats of fauna and ecologically significant wetlands

As identified above, the areas of potential wetland / ephemeral flow are not inland wetlands as defined by the NPS-F and have been identified as having low ecological value and the proposed activity as having a low magnitude of effect on these areas. As such the activity is considered **consistent with OBJ 15.**

OBJ 16 – For future activities, the avoidance or mitigation of off site impacts or nuisance effects arising from the location of conflicting land uses.

OBJ 17 – For existing activities (including their expansion), the remedy or mitigation of the extent of off site impacts or nuisance effects arising from the location of conflicting land activities adjacent to, or in the vicinity of, areas required for future or operational needs.

OBJ 18 – For the expansion of existing activities which are tied operationally to a specific location, the mitigation of off site impacts or nuisance effects arising from the location of conflicting land activities adjacent to, or in the vicinity of, areas required for current or future operational needs

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[55] Pattle Delamore Partners (25/05/2021) *Memorandum Re: Takapau WWTP Discharge Consent Review*, p 5-7

[56] Beca (22/07/2022) Letter *RE: Pre Hearing Three – Technical Response to Outstanding Matters* (document reference T:D.26), pp.15-16

[57] Pattle Delamore Partners (25/05/2021) *Memorandum Re: Takapau WWTP Discharge Consent Review*, p.8

The activity represents both the establishment of new activities (discharge of wastewater to land) and the continuation of existing activities (the discharge of odour from the WWTP and the discharge of treated wastewater via the overland flow path to the Makaretu River). As assessed above, given the proposed treatment of the effluent prior to discharge, under normal circumstances odour is unlikely to be considered a nuisance beyond the boundaries of the site. Controls, management plans and mitigation measures will be in place to ensure that when normal conditions are not achieved, any odour nuisance will be managed (i.e. flushing lines on the lower terrace) (see conditions 58(h) and (q) and 63(g)).

One of the submitters, Mr Hale raised concern about the proximity of the proposed land application area to two of the major intersections of Takapau with the state highway. It was agreed during the second pre-hearing meeting that Condition 26 should be included to ensure that the boundary of the property closest to the state highway would be planted to help mitigate any conflicting land uses as identified by Mr Hale.

Given the conditions of consent proposed by the applicant and the requirement for ongoing management, it is considered the application will be **consistent with OBJS 16, 17 and 18**.

OBJ 22 The maintenance or enhancement of groundwater quality in aquifers in order that it is suitable for human consumption and irrigation without treatment, or after treatment where this is necessary because of natural water quality.

POL 17 To manage the effects if activities that may affect the quality of groundwater in accordance with the following approach:

- **(c) To ensure that all activities, particularly discharges of contaminants onto or into land, comply with the environmental guidelines for groundwater quality, and the associated implementation approach, set out in Policies 75 and 76.**
- **(d) To encourage discharges of contaminants onto or into land where these are likely to have less adverse effect that discharges to water**

Policies 75 and 76 do not apply to activities in the Tukituki catchment. Generally, the activity will result in less adverse effects than the continued discharge of 100% of the treated effluent to water and therefore the activity is considered to be **consistent with OBJ 22 and POL 17**.

OBJ 27 The water quality in rivers, lakes and wetlands is suitable for sustaining or improving aquatic ecosystems, and other freshwater objectives identified in accordance with a catchment-based process set out in Policy LW1 and Policy LW2.

The proposed activity will significantly improve the water quality in the Makaretu River, thereby improving the quality of aquatic ecosystem. However, as per the assessment of the activity in regard to POL LW3 above, the activity may increase nutrient loading, particularly nitrogen species, in other streams within the Tukituki catchment. As this contribution by way of diffuse discharge is relatively small and considered no more than minor overall, the proposed activity is unlikely to result in a degradation of freshwater in other streams to the extent that it is not suitable to sustain life. However the cumulative effect of the activity combined with other legally consented and permitted activities may detrimentally effect the quality of the freshwater bodies. As such, ongoing requirements for the applicant and the farmer/landowner to adopt best agricultural practises and review farm nutrient input will help mitigate adverse environmental effects. As such it is considered that the activity is **not consistent with OBJ 27**, but is not repugnant to OBJ 27.

POL 47 – Discharges. To manage activities affecting the quality of water in wetlands, rivers and lakes in accordance with the environmental guidelines and implementation approaches set out in Chapter 5 of this Plan

POL 47(A) – Land based disposal of contaminants. Promote the land based disposal of wastewater..., so that:

- **(a) The adverse effects of contaminants entering surface water bodies or coastal water are avoided as practicable;**
- **(aA) Where it is not practicable to avoid any adverse effects of contaminants entering surface waterbodies..., then the effects are remedied and mitigated.**
- **(b) Any disposal of wastewater... to a surface waterbody occurs only when it is the best practicable option**

The proposed activity is demonstrated as being the best practicable option by the applicant[58]. The activity will result in some discharge into the Makaretu River during high flow events, this is considered to mitigate effects of the direct discharge due to the high dilution available during these high flow events. Additionally, the activity may result in some diffuse discharge to other surface water bodies as conveyed by groundwater, through ongoing farm management improvements, it is considered that the contribution can be reduced. Overall, it is considered that the application is **consistent with POLS 47 and 47A.**

OBJ 32 – Ongoing operation, maintenance and development of physical infrastructure that supports the economic, social and/or cultural wellbeing of the region's people and communities and provides for their health and safety.

OBJ 33 – Recognition that some infrastructure which is regionally significant has specific locational requirements.

The proposal represents the ongoing operation, maintenance and development of physical infrastructure that supports wellbeing and provides for the health and safety of the Takapau community by providing safe disposal of wastewater and protects water resources. Without the provision of a municipal wastewater supply the effects from poorly functioning onsite wastewater treatment systems could impact human and environmental health. The location of the WWTP and discharge to land requires proximity to each other as well as the Takapau township. As such it is considered the application is **consistent with OBJ 32 and 33**.

OBJ 34 To Recognise tikanga Māori values and the contribution they make to sustainable development and the fulfilment of HBRC's role as guardians... and tangata whenua roles as kaitiaki in keeping with Maori culture and traditions.

POL 58 To share information of matters of resource management significance to Māori and on processes to address them.

OBJ 35 To consult with Māori in a manner that creates effective resource management outcomes

POL 59 Consultation with tangata whenua should be undertaken in a manner that acknowledges Maori values, with the fundamental approach in consultation being 'kanohi ki te kanohi' (face to face) or personal contact...

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[58] LEI (November 2020) *Takapau Wastewater Treatment and Discharge Best Practicable Option* (document reference: T:C.12)

POL 61 Resource management decisions made subsequent to consultation shall show regard to that consultation

The applicant has shown a positive approach to the ongoing consultation with the tangata whenua and mana whenua in regard to the application. A Cultural Impact Assessment (CIA) was commissioned by the applicant and ongoing discussion documented, recommendations of the CIA have been adopted in the conditions of consent proposed by the applicant. As such it is considered that the application is **consistent with OBJ 34 and 35 and POLs 58, 59 and 61**.

OBJ 37 To protect, and where necessary, aid the preservation of mahinga kai (food cultivation areas)... taonga raranga (plants used for weaving and resources used for traditional crafts) and taonga Rongoa (medicinal plants, herbs and resources.

The applicant represents an activity that will go some way into improving the mauri of the Makaretu River and thereby aid the preservation of areas of mahinga kai etc. As such, it is considered that the application is **consistent with OBJ 37** and relevant policies.

Summary of Assessment Against Provisions of Regional Policy Statement

It is considered that the application is generally consistent with the objectives and policies of the Regional Policy Statement, although notably, it is considered that the activity is **not consistent with POL LW3 and OBJ 27**.

11.2.2 REGIONAL RESOURCE MANAGEMENT PLAN (RRMP)

Decision-makers on resource consent applications must have regard to the provisions of the RRMP as required by section 104(1)(b)(vi) of the RMA when considering applications for activities that are the function of a Regional Council. The RRMP became fully operative in 2006 and contains the objectives and policies which feed into the rules which establish the status of the activities which constitute this application.

The applicant has provided a comprehensive assessment of relevant objectives and policies of the RRMP in Appendix J of the application[59] and a further assessment as part of the s92 response[60]. As above, it is considered relevant to provide an full assessment of the relevant objectives and policies of the RRMP rather than adopting the Beca assessment given the iterations to the proposed activities resulting from the processing, notification and pre-hearing meetings and additional information that has been provided by the reviews of the technical documents.

Objective and Policies

OBJ 38 The sustainable management of the land resource so as to avoid compromising future use and water quality

It is considered that the proposal is generally **consistent with OBJ 38** given the sustainable aspects of reuse of wastewater to provide irrigation and some nutrient addition to farmland.

POL 67 Environmental Guidelines - Land

[59] Beca (28 April 2021) *Statutory and Rules Evaluation – Takapau Wastewater Treatment Plant*. Document ID: T:D.90b

[60] Beca (18 August 2021) *Takapau Wastewater Consent Application Update with CIA*. Document ID: T:D.90c

To encourage landowners and occupiers to manage the effects of activities affecting soil (including both land use activities and discharges of contaminants onto or into land) in accordance with the environmental guidelines set out in Table 5… and Table 7...

Table 5 outlines guidelines for appropriate land use which should not exceed the land use capability of the subject land as described in Schedule II. As identified throughout the application documents, the area of land for irrigation has been selected by the applicant as having the appropriate soil characteristics able to manage the hydraulic loading proposed and with appropriate land management practises to avoid soil damage and maintain vegetation cover as being **consistent with Policy 67** of the RRMP.

OBJ 39 A standard of ambient air quality is maintained at, or enhanced to, a level that is not detrimental to human health, amenity values or the life supporting capacity of air, and meets National Environmental Standards

OBJ 39aA standard of local air quality is maintained that is not detrimental to human health, amenity values of the life supporting capacity of air

POL 69 Environmental Guidelines and Standards – Air Quality

To Manage the effects of activities affecting air quality in accordance with the environmental guidelines and standards set out in Table 6, below.

1. **Odour – there should be no offensive or objectional odour beyond the boundary of the subject property**
6. **Ambient air quality –**
   a. **The ambient air quality must remain within the standards stated in the Resource Management (National Environmental Standards for Air Quality) Regulations 2004**
   b. **Where no national environmental standards exist, the ambient air quality should remain with the New Zealand Ambient Air Quality Guidelines MfE 2002**
   c. **Where the existing ambient air quality is better than concentrations specified in the standards and guidelines in (a) and (b), there should be no significant degradation of ambient air quality.**

As identified by the Beca planning assessment within the application[61], the discharges generated by the proposed activities relate to odour rather than any discharge regulated by the NES-AQ. The planning assessment generally considers that odours from the WWTP are generally low and dissipate within the boundaries of the site and considers that the proposal is consistent with these objectives and policies.

The Beca planning assessment does not provide any assessment of the activity in relation to the New Zealand Ambient Air Quality Guidelines. These guidelines provide values that are based on health effects, except for hydrogen sulphide which is based on odour nuisance and can be associated with sewage plants[62] where sulphur and oxygen mix in oxygen deprived environments. The guideline value for hydrogen sulphide is 7 µg/m^3 (1 hour average). As hydrogen sulphide is a biproduct of an oxygen deprived environment, which will be avoided on site through management processes and the proposed activity is not a point source discharge of specifically hydrogen sulphide, it is considered unlikely that the discharge will exceed this guideline value.

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[61] Beca (28 April 2021) *Statutory and Rules Evaluation – Takapau Wastewater Treatment Plant*. Document ID: T:D.90b

[62] Ministry for the Environment (2002) *'Ambient Air Quality Guidelines'*[Online] Available at: https://environment.govt.nz/assets/Publications/Files/ambient-guide-may02.pdf [Accessed: 23/03/2022]

In the LEI Land AEE[63], the applicant has identified that the odour from treated wastewater is generally low in intensity and if odours are apparent, this indicates a significant process failure. The applicant identifies that ongoing management is required to ensure anaerobic conditions do not occur including sludge management and flushing of irrigation pipes. It is considered that this will help ensure the activities meet the guideline value for hydrogen sulphide.

PDP reviewed the conclusions of the applicant in the AEE and considered that the odour from the WWTP and the additional wastewater storage pond that is proposed as part of the application low risk of odour[64].

When irrigated in an aerobic state, PDP consider that the wastewater will have minimal odour however if wastewater was to sit in the irrigation lines for a long period of time it may become anaerobic. If anaerobic conditions were to occur, the applicant proposes flushing the lines with clean water to mitigate any odour created by the anaerobic conditions. This is reflected in condition 58(h) and (q) and 63(g) and acknowledge that the frequency lines are flushed will need to vary depending on season etc. and can be appropriately managed via the ongoing management plan required by Condition 58. In addition, the applicant has identified that an area on the lower terrace will be selected for irrigation to re-occur if septicity in the lines develops, this will allow a maximum separation distance to the nearest residential receptor. This is specified by required (h) in condition 58.

As such, it is considered that under normal conditions, the activities will be consistent with Policy 69 of the RRMP, where normal conditions are not met, appropriate conditions are in place to ensure that the guideline values are not exceeded beyond the boundary of the property. As such, it is considered that the proposed activities are **consistent with Objectives 39 and 39a and Policy 69**.

OBJ TT1 To sustainably manage the use and development of land, the discharge of contaminants including nutrients, and the taking, use, damming or diverting of freshwater in the Tukituki River catchment so that:

(a) …
(b) Water quality enables safe contact recreation and food gathering;
(ba) Water quality and quantity enable sage and reliable human drinking water supplies;
(c) The frequency and duration of excessive periphyton growths that adversely affect recreational and cultural uses and amenity are reduced;
(d) …
(e) The mauri of surface water bodies and groundwater is recognised and adverse effects on aspects of water quality and quantity that contribute to healthy mauri are avoided, remedied or mitigated.

OBJ TT2 Where the quality of freshwater has been degraded by human activities to such an extent that Objective TT1 is not being achieved, water quality shall not be allowed to degrade further and it shall be improved progressively over time so that OBJTT1 is achieved by 2030.

The application represents a sustainable reuse of wastewater in so far as it can be used to irrigate farmland in a water scarce area and some of the nutrients in the wastewater can be used to replace synthetic inputs on the farm. The application provides good environmental and cultural impacts in so far as offering an alternative to the discharge of the majority of the wastewater into the Makaretu

[63] Lowe Environmental Impact (LEI) (April 2021) *Discharge to Land of Takapau Wastewater Assessment of Environmental Effects: Land* (document reference: T.D.10), p.32-33
[64] Pattle Delamore Partners (25 May 2021) *Memorandum Re: Takapau WWTP Discharge Consent Review*, p.9-11

River, as has occurred historically. The applicant notes in the water quality assessment[65] that the application of wastewater to land will contribute towards OBJ TT1 and TT2 by the steady diversion of treated wastewater away from the Makaretu River to the adjacent farmland and that the addition of UV treatment and likely attenuation of treated wastewater through the soils will lead to significant water quality improvements for the Makaretu River in terms of *E. coli*, phosphorus and a number of other contaminants. Beca found a lesser modelled reduction of the mass load reduction of nitrogen given the increased leaching of nitrogen species from the irrigated area into the groundwater, however argue that the percentage contribution of nitrogen to the catchment is small and therefore the reduction in nitrogen (approximately 10% reduction) remains as a measurable improvement.

The reporting officer agrees with the applicant's assessment that the proposed activity will improve the water quality of the Makaretu River and therefore is consistent with OBJs TT1 and TT2 in this regard. However, as noted in the PDP review, there is some concern that the percentage decrease in nitrogen loading proposed by the application will not go far enough to reach the 2030 goal of Plan Change 6 (Tukituki Plan) and that although the individual discharge is relatively small, the cumulative effects on the whole of the Tukituki catchment are more significant. Specifically, the groundwater monitored under the site is already exceeding the levels identified in Table 5.9.2 for nitrate-nitrogen and therefore the addition of the nitrogen species from leaching of wastewater into groundwater will further degrade the groundwater rather than improving it over time as required by OBJ TT2.

To help achieve progression toward the target of improved water quality, PDP recommended[66] that further assessment is given to the proposed land nutrient loading limits proposed by the conditions of consent and that these be set as a maximum discharge per year, rather than a 5 year rolling median as proposed by the applicant. Subsequently, the applicant has agreed to lower the nitrogen cap by 20% (from a total of 250 kg/N/ha/year to 200 kg/N/ha/year), therefore this will improve the reduction of nitrogen mass load further to the Beca assessment of 10% reduction. In addition to this, these figures will be reviewed in five years to see whether further reductions in nitrogen leaching can be achieved, therefore there will be an additional review between the date of issue and 2030.

Although the reduction of nitrogen goes some way to achieve the Tukituki water quality goals, it does not go all the way, but there is scope in the conditions of consent for ongoing and adaptive management to further reduce the nitrogen impacts between the issue of the consent and 2030. The reduction in other surface and groundwater determinands (including phosphorus and *E.coli*) are considered to be sufficient to help achieve the 2030 goals for these determinands.

On balance, notwithstanding the relatively small decrease in nitrogen from the previously consented activity, the application does result in a decrease in nitrogen loading and scope for continued decreases during the duration of the consent. As well as this, there are more significant decreases in phosphorus, *E.coli* and other parameters. As such it is considered that the proposal is **consistent with these Tukituki objectives TT1, TT2 and TT4a.**

OBJ TT4A To recognise that industry good practise for land and water management can assist with achieving Objectives TT1, TT2 and TT4.

As discussed in the assessment of environmental effects above, LUC Natural Capital Leaching Rates were intended by the Tukituki Plan to set limits on nitrogen leaching and to assist in achieving the catchment water quality targets. The LUC Natural Capital Leaching Limits for the proposed site are 24.8 – 27.1 kg/N/ha/year. The applicant proposes that the leaching from the irrigated area is up to 76 kg/N/ha/year from the a 19ha irrigated area (at Stage 2) while a 47 kg/N/ha/year is proposed as an

[65] Beca (28/04/21) *Takapau WWTP – Surface Water Assessment of Environmental Effects* (document reference: T.D.25), p.2 and p.51

[66] PDP (24/11/21) *Memorandum Re: Takapau WWTP Discharge Consent Further s92 Response Review,* p.4

average across the whole site (these figures are from Version 6.4.2 of overseer using the cap of 200 kg/N/ha/year as agreed by the applicant)[67].

The proposed leaching, on a whole site basis, will be nearly double the permitted limit set to achieve water quality targets by the Tukituki Plan and designates the non-complying activity status of the activity.

However, in the interim of the application being lodged and processed, the government have undertaken a review of Overseer and concluded that there is not enough confidence in Overseer to estimate the volume of nutrient loss and whether nitrogen was being increased or reduced as a result of on farm actions. Subsequently as a result of the government review, HBRC considered that it was unable to continue with the implementation of the Tukituki Catchment Plan as it is currently written and have determined that it is unable to reliably assess whether individual high leachers are exceeding the LUC N allowance based on Table 5.9.1D, without the use of Overseer.

The applicant identified that they wanted to continue the application being processed as an individual high leacher not being able to comply with Rule TT1 as the N leaching exceeds the LUC limits by over 30% (notwithstanding Overseer cannot be used to verify this). This level of high individual leaching is reflective of the fact that the applicant proposes ordinary farming activities to continue at the site with no movement towards a farming system that would reduce nitrogen nutrients inputs significantly or increase the rate of uptake by plants. Other alternatives, such as a cut and carry regime (which the applicant explored in the Future Farming Assessment Report[68] result in a significant reduction in nitrogen loads and are consistent with Objective TT2. It appears through discussion with the applicant that these alternatives are not attractive to the farmer and given CHBDC are not the land owners there is a desire for flexibility of land use of the irrigation area for economic reasons. These high levels of nitrogen leaching will impact the mauri of the groundwater over time. As such, although the application represents an improvement to the previous direct discharge of treated wastewater to the Makaretu, ongoing farm practises on site are not considered best practise and therefore it is considered that the activity is **not consistent with OBJTT4A**.

OBJ TT5 Subject to objectives TT1, TT2 and TT4, to enable the development of on-farm storage… that improve and maximise the efficient allocation and efficient use of water

The applicant has identified that additional storage of wastewater will be required to allow reduction in discharge to the Makaretu and that the scheme is to service the community aims to maximise the efficient use of water. In addition to this, the reporting officer considers the reuse of water from the Takapau WWTP as irrigation a sustainable efficient use of water (albeit with additional nutrients than when compared to just water) in an area where there are significant allocation of groundwater and surface water up to the limits. In terms of its water use, the proposal aligns with Objective TT5 in that the on farm storage of the wastewater allows the land to be irrigated and removes the reliance of the farm wholly on its freshwater allocation thereby representing an efficient use of water. As such it is considered that the proposal is **consistent with OBJTT5.**

POL TT1 Surface Water Quality Limits, Targets and State Indicators

1. ***In surface water bodies in Water Management Zones 1, 2, 3 and 5 Hawke's Bay Regional Council Will (in Table 5.9.1B):***

[67] Lowe Environmental Impact (31/01/2022) *Memorandum RE: Takapau Discharge Property – Nutrient Application and Loss Update* (document reference T:C.14c), p.2

[68] Lowe Environmental Impact (29.03.2021) Memorandum Re: Existing/Future Farming System and OverseerFM Analysis. (document reference: T:C.14a)

    a. ***Set instream water quality concentration limits and targets for dissolved inorganic nitrogen (DIN) to provide for maintenance or enhancement of the habitat and health of aquatic ecosystems, macroinvertibrates, native fish and trout (with the targets to be met by 1 July 2030);***
    b. ***Set instream water quality concentration limits and targets for nitrate-nitrogen (NO_3-N) to protect aquic fauna from toxicity effects (with targets to be met by 1 July 2030);***
    c. ***Set instream water quality concentration limits and targets for dissolved reactive phosphorus (DRP) and instream targets for periphyton biomass and cover (with the targets to be met by 1 July 2030).***
2. ***In surface water bodies in all Water Management Zones, Hawke's Bay Regional Council will***
    a. ***Set (in Tables 5.9.1A) instream water quality limits/targets for temperature, dissolved oxygen, Escherichia coli (E. coli), Total Ammoniacal Nitrogen and other toxicants'***
    b. ***Set (in Table 5.9.1B and C) environmental state indicators for the macroinvertebrate community index (MCI), visual water clarity and deposited sediment***

The Makaretu River sub-catchment sits within the Tukituki Catchment Management Zone 3 and is considered a mainstem river. As such Table 5.9.1B sets a Dissolved Inorganic Nitrogen (DIN) limit of 0.8 mg/DIN/L; a dissolved reactive phosphorus limit (DRP) limit of 0.010 mg/DRP/L, a nitrate-nitrogen (NO_3-N) maximum median limit of 3.8 mg/ NO_3-N/L among others.

The Beca Surface Water Assessment of Effects Report [69] found that there would be no additional exceedances of parameters referenced by PC6 Tables 5.9.1A and B as a function of the future WWTP stages and that the UV treatment and higher dilution rates contribute to the expectation that downstream *E.coli* concertation will meet PC6 targets year round. The Beca report also indicates that the existing discharge does not have an environmentally meaningful effect on macroinvertebrate communities or on levels of periphyton in the Makaretu River and it is expected that the reduced direct discharge proposed will result in an improvement to instream ecological values. Proposed consent monitoring conditions of the Makaretu River upstream and downstream of the discharge point are considered appropriate by PDP in their review in terms of impacts on macroinvertebrate communities and periphyton[70].

The Beca assessment is somewhat agreed with by the reporting officer that proposed approach will result in a reduction in contaminants (in particular phosphorus and nitrogen) entering the Makaretu River which is a positive outcome and this aspect of the proposals is in accordance with POL TT1(1). However, the PDP review notes that although the application has undertaken a significant assessment on the impacts of the proposed activities effects on the Makaretu River, PDP consider that given the application of wastewater to land and the interactions between groundwater and surface water bodies in the wider environment, the activity will likely result in diffuse discharge received by the Porangahau Stream. The applicant have provided an assessment[71] using what they consider to be a conservative estimate of 10% of the flow from the WWTP irrigated farmland ending up on the Porangahau catchment would result in a 0.07% increase in the mass loading of nitrogen in the Porangahau Stream and therefore the applicant considered this to be a negligible increase and should be considered alongside the overall decrease expected in the nitrogen loads downstream. PDP have

[69] Beca (28/04/21) Takapau WWTP – Surface Water Assessment of Environmental Effects (document reference: T.D.25), p.49

[70] Pattle Delamore Partners (25/05/21) *Memorandum Re: Takapau WWTP Discharge Consent Review*, p.9

[71] Beca (22/07/2022) *Letter Re: Pre-Hearing Three – Technical Response to Outstanding Matters* (document reference: T.D. 26) pp 15-16

noted that a worst case scenario (100% of the flow from the WWTP irrigated farmland ending up in the Porangahau Stream) will have a 0.7% increase in mass loading of nitrogen in the Porangahau Stream. This is considered relatively small at an individual level, but is an increase nonetheless of an already degraded catchment.

Given the Porangahau Stream catchment is already exceeding its DIN limit (rolling average of 3.07mg/L/DIN), DRP Limit (rolling average 0.021mg/L/DRP) and macroinvertebrates (MCI), the potential impact that the proposed activity may have on the Porangahau cannot be considered to comply with POL TT1. If the activity has detrimental effects on the surface water of another surface water body, which is already a degraded environment it cannot be considered that this aspect of the application is consistent with POL TT1.

The relative mass load contribution of the activity to the total phosphorus and total nitrogen mass load in the Tukituki Catchement Management Zone 3 (which both the Porangahau Stream and the Makaretu Stream are part of) are relatively small as identified by the application[72]. Given the specific impact of the activity on the Porangahau catchment is relatively small it is not considered to be a more than minor impact and it is considered an adaptive management approach is appropriate to overall reduction of inputs into the groundwater which will have an ongoing positive effect on the Porangahau Stream. Proposed Condition 8 require a limit on the amount of nitrogen and phosphorus that can be used on the area of the site and Condition 76 requires a review of this every five years to determine whether this can be reduced. Additional Condition 75(i) allows for review given new scientific understanding of which catchments the discharge is contributing to.

Overall, the activity is **considered to be consistent with the provisions of POL TT1**, because of the increase, albeit minor in nitrogen loading in resulting from the activity in the Porangahau Stream, even though it significantly improves the impacts on the Makaretu River when compared to the previously consented discharge.

3. ***Manage point source discharges and the use of production land upstream of any registered drinking water supply takes to ensure compliance with the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 and the Drinking Water Standards for New Zealand (2005 Revised edition 2008).***

The Beca hydrogeological assessment report[73] provided in support of the application identifies that the source protection zone (SPZ) for the Takapau Public supply bore (no 1762) is approximately 1.1 south west of the WWTP is upgradient of the proposed discharge and suggested that any infiltrated wastewater from the WWTP site will not travel towards the SPZ. The Beca report identified 27 other existing bores known to be located within a 2km radius of the site, however none were considered directly downgradient of the WWTP.

PDP requested an additional assessment of all downgradient bores (including shallow groundwater supplies connected to the receiving surface waterways)[74]. The applicant considered that bore 4838 is the only down gradient bore within 2.5km of the WWTP and noted this bore to be deep and therefore unlikely for any contamination crossover between the shallow and deeper aquifer given the confining layers identified in the bore log.

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[72] Beca (28/04/21) *Takapau WWTP – Surface Water Assessment of Environmental Effects* (document reference: T.D.25), p.40

[73] Beca (23/04/21) *Takapau Wastewater Treatment Plant – Hydrogeological Assessment* (document reference: T:B.14), p.3, p.17

[74] Pattle Delamore Partners (25/05/21) *Memorandum Re: Takapau WWTP Discharge Consent Review*, p.6

PDP identify that the risk of system failure should be considered under the National Environmental Standards for Sources of Human Drinking Water, Condition 73 covers this requirement. In addition, Condition 75 (g) allows for review of the conditions of consent to allow for new registered drinking water suppliers that may be directly impact by the discharge to be notified and any changes in the operational management plan to be adopted to avoid adverse effects on these receptors.

Overall, the proposal is considered to be **consistent with POL TT1(3).**

POL TT2 Groundwater Quality Limits

1. ***For groundwater Hawke's Bay Regional Council will:***
    a. ***Manage the adverse effects of activities likely to affect the quality of groundwater located 10m or more below ground level in accordance with the limits for aesthetic, organic and inorganic determinands; Escherichia coli and nitrate-nitrogen set in table 5.9.2;***
    b. ***Set (in Table 5.9.2) an environmental state indicator for the annual average concentration of nitrate-nitrogen***
    c. ***Manage activities likely to affect the quality of groundwater connected to and affected surface water quality having regard to effects in the achievement of the limits and targets set in Tables 5.9.1A and 5.9.1B;***
    d. ***Manage point source discharges and the use of production land upstream, upstream of any registered drinking water supply takes to ensure compliance with the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 and the Drinking Water Standards for New Zealand (2005 Revised edition 2008).***
2. ***The implementation of POL TT2(1) shall take into account uncertainties associated with variables such as the location of the activity, the spatial and temporal nature of groundwater flows, seasonal variation in groundwater flows and the effects of historical production land use activities on existing and future groundwater quality.***

The effects of the application of wastewater to land have been described by the applicant in the LEI land AEE[75] and the impact on groundwater described in the Beca hydrogeological assessment[76] with additional comment in the Beca s92 response[77].

The proposed wastewater irrigation onto land is expected to increase the current nitrogen leaching into the shallow gravelly aquifer system where groundwater flows generally east-southeast, PDP note that nitrate-nitrogen within the shallow aquifer system could migrate downward into the deeper groundwater, however Beca in their s92 response do not agree with this assessment. PDP consider that all downgradient bores may be impacted a small degree as a result of the contribution to nitrate-nitrogen concentrations in groundwater.

Groundwater quality data provided by the applicant for the six monitoring piezometers around the site indicates that the shallow groundwater already has elevated nitrate-nitrogen on the south and east side of the site. PDP consider that groundwater deeper than 10m at and downgradient of the site appear to already by impacted by nitrate-nitrogen exceeding the limits in Table 5.9.2. Table 5.9.2 sets a nitrate-nitrogen (NO_3-N) limit of 11.3 mg NO_3-N/L and the recordings around the site from bores 17124 and 17126 are 18.2mg/L and 13.1mg/L respectively. Subsequently it is considered that the

[75] Lowe Environmental Impacts (04/21) *Discharge to Land of Takapau Wastewater Assessment of Environmental Effects: Land* (document re: T:D.10)
[76] Beca (23/04/2021) *Takapau Wastewater Treatment Plant – Hydrogeological Assessment* (document ref: T:B.14), p.12-14
[77] Beca (20/08/21) *Letter Re: Takapau WWTP Hydrogeology s92 Response* (T:D.20), p.7.

additional nitrate-nitrogen that is proposed to enter the groundwater as a result of the proposed activity are not going to help achieve the limit in Table 5.9.2. Therefore the activity cannot be considered consistent with POL TT2(1)(b).

As above, PDP have raised concerns about the impact the activity is likely to have on the groundwater and the knock on effect this might have on other surface water bodies and it is considered that the application is **not consistent with POL TT2(1)(c).**

POL TT3 Receiving Environments Limits for Point Source Discharges

1. ***In surface water bodies in all Water Management Zones, Hawke's Bay Regional Council will manage point source discharges so that after reasonable mixing, contaminants discharged (either by themselves or in combination with the same, similar or other contaminants) do not cause:***
    a. ***The Table 5.9.1A and 5.9.1B limited to be exceeded; or***
    b. ***The following receiving environment limits to be exceeded at any time all year round:***
        i. ***The percentage reduction to the Quantitative Marcoinvertebrate Community Index (QMCI) score relative to the QMCI upstream of the discharge should not exceed 20% at all flows***
        ii. ***The average of the five days filtered / soluble carbonaceous biochemical oxygen demand ($SuBOD_5$) shall not exceed 2 mg/L at flows less than median flows***
        iii. ***The average particulate organic matter (POM) shall not exceed 5 mg/L at flows less than the median flow;***
        iv. ***The concentration of Total Ammoniacal Nitrogen (TNH_3-N) shall not exceed the acute limits tabulated in Schedule XXIII at all flows (to avoid acute toxicity effects)***
        v. ***The percentage reduction to the water clarity relative to the water clarity upstream of the discharge should not exceed:***
            1. ***..***
            2. ***20% at flows less than the median flow in the mainstem of the Tukituki River in Water Management Zones 1 and 3…***
            3. ***…***
2. ***The implementation of POL TT3(1) shall take into account:***
    a. ***Any measurement uncertainties associated with the variables such a location, flows, seasonal variation and climatic events;***
    b. ***In relation to discharges, the degree to which a discharge of a temporary nature, or is associated with necessary maintenance work.***

The proposed activity will help protect the Makaretu River due to the proposed changes in surface discharge regime – only discharging wastewater during higher than median (depending on the stage) resulting in the applicant finding no additional exceedances of parameters identified by the Tukituki Plan change. This updated regime results in the proposal being **consistent with POL TT3**.

POLL TT3A Managing Existing Community Wastewater Discharges

1. ***Existing community wastewater discharges to surface water are provided for on the basis of best practicable option treatment over time.***

Section 2 of the RMA defines 'best practicable option' as the following:

'*...in relation to a discharge of contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard to, among other things, to –*

(a) The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and

(b) The financial implications, and the effects on the environment, of that option when compared with other options; and

(c) *The current state of technical knowledge and the likelihood that the option can be successfully applied*.'

The applicant has based much of their reasoning for the proposed activities on the basis that the proposal represents the best practicable option in accordance with POL TT3A. A best practicable option (BPO) report was submitted in support of the application[78] which outlines the process of decision for the applicant to arrive at the current proposal.

Throughout the application processing, it has been noted that from a purely environmental outcome centric view, a farm management system that employed a cut and carry system with supplementary fertiliser only applied as required for plant health would be expected to result in significantly lower leaching rate and would therefore more likely be consistent with a number of other Tukituki objectives and policies. The applicant argues in the BPO report that the BPO is a balance between achieving the least impacts on the receiving environment while being at the most affordable cost to the community. The proposal results in application of wastewater that is a slight exceedance (2mm) of field capacity (therefore is considered non-deficit irrigation)[79]. See Condition 7 in Appendix 1 of this report which allows wastewater to be irrigated at 2mm above field capacity. Non-deficit irrigation allows for more wastewater to be applied to land, reducing demand for a significantly sized storage pond. The Best Practical Option Report[80] notes that for the Takapau community, having a smaller pond, some availability to discharge into the river will make the proposal much more affordable for the Takapau community. It is noted as well that an emergency condition has been recommended allowing for additional wastewater to be applied to land when the river flows do not facilitate a surface water discharge but the capacity within the storage pond is reaching 80% capacity (see condition 13 of Appendix 1 of this report), thereby protecting the river from discharges during lower flows.

The application site is identified as being preferred due to its proximity to the existing WWTP, thereby minimising costs associated with pumping waste from the WWTP to discharge site. In addition, and key, is the conditions of the site which limits the potential to receive wastewater for example underlying geology. The availability of land that is of a sufficient size, appropriate underlying geology, proximity to the existing and WWTP and not constrained by other significant factors (natural hazards etc). The applicant identified a number of sites suitable for wastewater irrigation and confirmed that the subject site at 45 Burnside Road resulted in strong interest from the landowner to receive wastewater and work with CHBDC. Given that the applicant does not own the site that wastewater is to be irrigated on, the processing planner understands that given CHBDC wish to retain flexibility for the site operator to undertake site operations for economic reasons even though as specified throughout the application, a cut and carry system would result in less adverse environmental impacts.

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[78] LEI (November 2020) *Takapau Wastewater Treatment and Discharge Best Practicable Option* (document ref: T:C.12)

[79] CHBDC (24/09/21) *Request for Further Information -Takapau Wastewater Discharge APP-126522 – Second Response*, p.6

[80] Lowe Environmental Impact (November 2020) *Takapau Wastewater Treatment and Discharge Best Practicable Option* (document reference: T:C.12), p.20

The original application sought to apply nutrients via wastewater and then allow the farmer to continue to apply synthetic fertilisers at a similar rate to existing. Through the discussions with the applicant, the maximum nitrogen and phosphorus loading has subsequently been reduced so that less fertiliser should be added to the irrigated area apart from where needed to supplement the nitrogen and phosphorus supplied by the wastewater.

Taking into account the positive financial implications for the community of the availability of the site for irrigation, desire of farmer to receive wastewater, the suitability of the underlying ground, the proximity to the WWTP and the conditions agreed by the applicant to reduce use of additional fertiliser and review the use every five years (Conditions 8 and 76) as well as conditions requiring the prioritisation of using wastewater onto land rather than other water sources (Condition 16), it is considered that it is considered that the proposed activity is generally **consistent with POL TT3A**.

POLL TT4 Implementing the Nitrogen Limits and Targets

1. ***To ensure that Table 5.9.1B nitrate nitrogen and dissolved inorganic nitrogen surface water quality limits and Table 5.9.1D Tukituki LUC Natural Capital Leaching Rates are not exceeded on a whole of farm property or whole of farming enterprise basis:***

    a. ***From 1 June 2013 onwards farm properties or farming enterprises exceeding 4ha in area shall be required to either***
        i. ***Keep the records specified in Schedule XXI so that Nutrient Budgets can be calculated using Overseer (or an alternative model approved by Hawke's Bay Regional Council) prior to 31 May 2018***
        ii. ***Keep copies of Nutrient Budget input and output files that have been prepared in accordance with an industry programme approved by Hawke's Bay Regional Council***

    …

    b. ***By 1 June 2018 farm properties or farming enterprises exceeding 4ha in area shall prepare and maintain a Farm Environmental Management Plan prepared in accordance with Schedule XXII. The Farm Environmental Management Plan (FEMP) should be in proportion to the complexity or intensity of the particular farming operation. The FEMP shall be updated at three yearly intervals from 1 June 2018.***
    …

    c. ***Require industry good practises to be implemented on farm properties or farming enterprises in order to minimise nitrogen losses***

    d. ***Until 31 May 2018 the managers of farm properties and farming enterprises shall be required to measure or model nitrogen leaching rates to support the preparation of Nutrient Budgets to be included in a FEMP. The Nutrient Budgets must be updated thereafter at least 3 yearly. The initial Nutrient Budget must be provided to Hawke's Bay Regional Council while the three yearly updates need only be provided to the Council upon written request.***

    e. ***Require that the records kept in accordance with POL TT4(1)(a), (b) and (d) are to be reviewed annually in accordance with an industry programme approved by Hawke's Bay Regional Council to assess whether any farm system changes are evident in the previous 12 months. If such a change is evident, the Nutrient Budget for the farm system must be updated to determine whether the nitrogen***

leached from the land exceeds the relevant limit in Table 5.9.1D on a whole of farm property or whole of farming enterprise basis and the updated Nutrient Budget must be provided to Hawke's Bay Regional Council

f. Allowing until 31 May 2020 farm properties or farming enterprises to implement any necessary changes to their farming systems to achieved the Table 5.91D Tukituki LUC Natural Capital Nitrogen Leaching Rates on a whole farm property of whole of farming enterprise basis.

g. Require the use of production land on properties greater than 4ha in area in those Tukituki River sub-catchments where there are exceedances of Table 5.1.9B (surface water) or Table 5.9.2 (groundwater) nitrate-nitrogen or dissolved inorganic nitrogen limits and target to be subject to land use consent under Rule TT2 or Rule TT2A if the targets are still exceeded or become exceeded after 1 June 2020…

The applicant has not provided a Farm Environmental Management Plan (FEMP) which incorporates both the existing farming activities and the proposed wastewater activities, despite being asked to provide a FEMP pursuant to s92 of the RMA to help determine the environmental effects of the activity.

It is understood that a FEMP update is currently being undertaken by Ravensdown for the current farm activities but not the future farm activities combined with the discharge of treated wastewater.

The applicant has provided modelling using Overseer for nutrient loss summaries for Stages 0-2 of the proposed activity and provided a farm management summary[81]. Management of the irrigated land is proposed to remain as low intensity cattle finishing with rotational cropping, crops for human consumption are proposed to be removed.

The proposed nutrient limits in Condition 8, combined with wastewater application rates, and stock withholding times have been identified by the applicant as farm management practises that will be adopted to mitigate the loss of nutrients from the farming activities into the wider environment.

POL TT5 Implementing the Phosphorus Limits and Targets

1. To ensure that the Table 5.9.1B dissolved reactive phosphorus (DRP) surface water limits are not exceeded and to attain the Table 5.9.1B targets by July 2030, Hawke's Bay Regional Council will:

a. From 1 June 2018 onwards, require farm properties or farming enterprises exceeding 4ha in area to prepare and maintain a Phosphorus Management Plan as part of a Farm Environmental Management Plan prepared in accordance with Schedule XXII

...

b. In areas where the Table 5.9.1B DRP targets are exceed

i. Ensure point source discharges do not contribute any additional phosphorus load to the Tukituki River and its tributaries through consent review and renewal processes seek to reduce existing loads where necessary to progress towards phasing out the exceedance

ii. Ensure any new point source discharges will not increase DRP concentrations in the Tukituki River or its tributaries after reasonable mixing;

[81] Lowe Environmental Impact (LEI) (04/21) *Discharge to Land of Takapau Wastewater Assessment of Environmental Effects: Land* (document reference: T:D.10)

c. ...

d. Require any application for resource consent for the use of production land on farm properties or farming enterprises to demonstrate:

i. In areas where the Table 5.9.1B DRP limits are not exceeded that the proposed activity will not lead to an exceedance of the limits in the Tukituki River or its tributaries

ii. ....

iii. The likely achievement of (i) and (ii) through the preparation of a phosphorus management plan

e. Recognise that significant parts of the Tukituki River catchment are generally in a state of over-allocation with respect to instream DRP limits and therefore through the implementation of land use rules:

i. On land that is less than 15 degrees in slope, require livestock (other than sheep) to be excluded from lakes, wetlands and flowing rivers and their margins by 31 May 2021

ii. ...

iii. ..

iv. Require formed stock races crossing rivers and streams (excluding managed stock crossings) to be bridged or culverted by 31 May 2020

f. ...

The proposed activity will reduce the phosphorus mass load significantly from Stage 0 (comparison with the previous discharge) to Stage 1 with further reductions at Stage 2. The relative mass load of phosphorus contribution of the Takapau WWTP to the Tukituki Catchment Management Zone 3 is calculated to be 1.33% and reduces to 0.52% at Stage 1 with a further reduction to 0.26% at Stage 2[82]. As the Makaretu catchment is not currently exceeding the DRP limit, this reduction in Phosphorus is consistent with POL TT5(b)(i) and (d)(i). Given that phosphorus loss is via erosion and overland flow rather than leaching as it binds readily with the soil rather than water[83], the loss of phosphorus can be limited through appropriate farm management, identification of critical source zones, exclusion of livestock from these etc. A condition of consent is offered for the applicant to provide a FEMP including a phosphorus management plan, which has not currently been provided (Condition 18, 19 and 20).

Overall, it is considered that the application is **consistent with POL TT5** given the proposed reduction in phosphorus that will enter the wider environment as a result of the proposed activity.

11.2.3 S104D GATEWAY TEST

S104D states that one of the gateway tests that an application is required to pass to allow the granting of a consent with a non-complying activity status is that the activity will not be contrary to the objectives and policies of the relevant plan and any relevant proposed plan. The High Court has noted that the word contrary means being 'opposed to in nature, different to or opposite and also repugnant or antagonistic'[84]. S104(1)(b) requires the Council to consider whether the non-complying activity is opposed in nature to the objectives and policies of the plan. This process involves an overall consideration of the purpose and scheme of the plan rather than a checking of whether the non-complying activity fits exactly within the detailed provisions of the plan[85].

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[82] Beca (28/04/2021) *Takapau WWTP – Surface Water Assessment of Environmental Effects– Makaretu River* (document reference: T:D.25)

[83] Beca (23/04/2021) *Takapau Wastewater Treatment Plan – Hydrogeological Assessment* (document reference T:B.14), p.18

[84] NZ Rail Ltd v Marlborough DC (1994) NZRMA 70 (HC)

[85] Eldersilie Park Ltd vs Timaru DC [1995] NZRMA 433

As identified through the objective and policies assessment above, although the proposed activity is not entirely consistent with a number of objectives and policies of the RRMP, specifically Plan Change 6, on balance the inconsistencies are not considered repugnant to the intent of Plan. Although the proposed activity does not result in a large decrease in the mass loading of nitrogen from the activity when compared to the baseline, there is a reduction which will be further reduced by ongoing requirements to review the limits of nitrogen and phosphorus by the consent conditions. Mass loading of phosphorus and other parameters are greatly improved as a result of the proposed activity. Additionally, the application has taken into account and included tangata whenua in the decision making process and the proposal results in the inclusion of tangata whenua values in the management and development of resources as directed by the RPS.

The activity is not consistent with Policy TT1 and TT2(1)(c), however on balance it is considered that the activity is not repugnant or opposed in nature to the intent of the RPS, RRMP and PC6. Notwithstanding this, the conclusion of the assessment of environmental effects above is that the proposed activity will not cause any more than a minor effect and therefore can pass this arm of the s104D gateway test. Therefore consent can be granted to the non-complying activity pursuant to s104D.

12. SECTION 105 AND 107 OF THE RMA

In addition to the framework for consent authorities to make a decision established by s104 of the RMA, sections 105 and 107 provide specific additional considerations for S15 application (discharges).

Section 105

Section 105(1) of the RMA relates the discharge permits and requires the consent authority to have regard to the following:

(a) The nature of the discharge and the sensitivity of the receiving environment; and
(b) The applicant's reasons for the proposed choice; and
(c) Any possible alternative methods for discharge, including discharge into any other receiving environment.

The proposal includes consent to discharge to water and to land. The nature of the discharge to water is likely to improve once consent is obtained (UV and filtration) and over time as Stages 0 -2 require different discharge regimes depending on river flows. The nature of the receiving environment for the river discharge and effects is assessed on this basis. It is considered the application is suitable in terms of the discharge to water / through the high rate land passage.

In terms of the land based discharge, the applicant's options, choice of proposal and reasons behind it are set out in the various supporting application documents as well as the Best Practical Option Report[86].

In their reviews[87,88], PDP notes that a cut and carry regime described in the future farming assessment report[89] has the potential to significantly provide more nitrogen uptake which would result in a larger reduction of nitrogen leaching leading to a positive effect on the wider Tukituki catchment as well as

[86]Lowe Environmental Impact (November 2020) *Takapau Wastewater Treatment and Discharge Best Practicable Option* (document reference: T:C.12)
[87] PDP (25/05/2021) *Memorandum Re: Takapau WWTP Discharge Consent Review*. pp 3–4
[88] PDP (07/09/2021) *Memorandum Re: Takapau WWTP Discharge Consent s92 Response Review*. pp 2 - 3
[89] Lowe Environmental Impact (29/03/2021) *Memorandum RE: Existing / Future Farming System and Overseer FM Analysis* (document reference T:C.14a)

at a smaller catchment scale. The proposal from the applicant has the potential for a reduction in nitrogen load to the catchment by approximately 10% (this is using the maximum nitrogen loading of 250kg/N/ha/year), as per Table 6.8 of the AEE[90], while Overseer modelling for the cut and carry would reduce nitrogen contribution under Stage 2 2048 flows by 65% relative to the existing scenario. It appears through discussion with the applicant that these alternatives are not attractive to the farmer and given CHBDC are not the land owners there is a desire for flexibility of land use of the irrigation area for economic reasons. Given the Best Practical Option report which identifies that the site is favourable given the location in proximity to the existing WWTP and underlying soils suitable for accepting the wastewater, these reasons for the proposed choice have been taken into account.

Section 107

Section 107 of the RMA prevents a consent authority from granting a discharge permit if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

c*) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*
d) any conspicuous change in the colour or visual clarity:
e) any emission of objectionable odour:
f) the rendering of fresh water unsuitable for consumption by farm animals:
g) any significant adverse effects on aquatic life.

The applicant has not provided an assessment against s107. It is considered that the proposed conditions will ensure compliance against s107 is achieved, particularly given any discharge to water will be treated wastewater.

13. STATUTORY ACKNOWLEDGEMENT

Section 104(1)(b) of the RMA sets out the matters to be considered when assessing a consent application should include relevant provisions of various legislation and regulations. Relevant provisions of national environmental standards, policy statements and plans have been addressed in the assessment above. In regard to other regulations, relevant statutory acknowledgements have been assessed below.

Statutory acknowledgements are appended to the RRMP and is a formal recognition made by the Crown of a claimant group's particularly cultural, spiritual, historical and traditional association with a specific area (statutory area) owned by the Crown.

The Makaretu River and its tributaries is recognised as a statutory area as set out by the Schedule 3 of the Heretaunga Tamatea Claims Settlement Act 2018. This statutory area falls within the Heretaunga Tamatea Area of Interest.

The Makaretu River takes its name from a type of scented grass that grew along its banks. From its source in the Ruahine Range to a point on the river known as Rākautihia, the hapū associated with this section of the Mākāretu River are Ngāi Te Rangitotohu and Ngāti Mārau. These hapū had mahinga kai along the banks and sourced food such as aruhe, tuna, koura, ngaore and birds from the river area. There are several wāhi tapu in the form of urupā in different locations on the higher banks above the river.

[90] Lowe Environmental Impact (04.2021) Takapau Wastewater Treatment Plan Discharge Resource Consent Application and AEE, p.22

On the northern bank of the upper section river was Horoure pā. There were a number of crossing points in this section of this river. The most wellknown tracks were Te Tāwai which took travellers to Te Kūhā o Hinekura o the nothern side of the river, and Te Takanga-o-Tauterangi which ran from the southern bank to Rākautihia on the northern side of the river.

Also in the upper section of the river was a flax swamp named Te Harakeke-a-Te Hinekai where flax was collected.

From Rākautihia heading east to Karitaki and on to Tūpokoruru the hapū associated with the river include, Ngāi Tahu ki Takapau, Ngāi Te Kikiri o Te Rangi and Ngāi Toroiwaho.

From Tūpokoruru to Te Whare o Hinetaia, near where the Mākāretu joins with Māharakeke Stream and the Tukipō River, the hapū associated with this section include Ngāi Tahu ki Takapau and Ngāi Toroiwaho. Both the middle and lower sections of the river had the karetū grass growing along the banks as well as hinau trees which were the source of berries.

In accordance with the provisions of the Heretaunga Claims Settlement Act 2018, a summary of the application was sent to the trustees of Heretaunga Tamatea Claims Settlement Trist on 03/05/2021. Additionally, the Heretaunga Tamatea Claims Settlement Trust were directly notified of the public notification of this consent. No correspondence was received from Heretaunga Tamatea and they did not submit on the application. This does not necessarily mean that the identified Statutory Acknowledgement Area is not potentially affected by the activity. Although given the conclusion of the Cultural Impact Assessment, it is considered that the proposed activities result in a more favourable outcome for tangata whenua than continued discharge of all wastewater to the river.

14. PART 2 MATTERS

Part 2 of the RMA specifies the purpose and principals of the Act, including matters of national importance (s.6), other matters which particular regard must be had (s.7) and Treaty of Waitangi principles (s.8).

Section 104(1) of the RMA makes all decision on resource consent applications subject to Part 2. The phrase 'subject to Part2' was subject to appeal in the recent case R J DAVIDSON FAMILY TRUST v MARLBOROUGH DISTRICT COUNCIL [2019] NZCA 57. The result of this appeal makes it very clear "*that Part 2 should be considered and would override the provisions of planning instruments in the event of a conflict between those and Part 2*". Particularly if it is clear there is a shortfall or gap in the objectives, policies or provisions in a Regional or District Plan(s) as was found in the DAVIDSON case. The applicant's assessment against Part 2[91] has been considered and also briefly set out my own analysis of the relevant parts of Part 2 for this proposal below.

Section 6 of the RMA requires that matters of national importance are considered when exercising the functions of the Act. I agree with the applicant's assessment of the proposal in relation to matters of national importance whereby the building of the additional storage pond the removal of much of the discharge from the Makaretu River will help preserve the natural character of the river and its margins (s.6(a)). Not mentioned by the applicant is the fact that the proposed activity provides for the relationship of Maori and their culture and traditions with...water (s.6(e)). Whereby the removal of much of the discharge will allow recovery of the mauri of the Makaretu River.

[91] Beca (28/04/2021) Statutory *and Rules Evaluation – Takapau Wastewater Treatment Plant* (document reference: T:D.90b) pp. 23 -25

In terms of Section 7 of the RMA, other matters to which the applicant believes particular regard must be had are subsections (a), (aa), (b), (c), (d), (f) and (h). I agree with the applicant's assessment of the consideration of these 'other matters' throughout the application process, including engagement with mana whenua and hapū groups as well as development of the proposed activity in regard to the efficient use of existing development (the WWTP) and physical resources (the availability of suitable land). In addition Section 7(i) the effects of climate change is considered relevant. The activity provides for continued reuse of water in a water scarce area which is only likely to be exacerbated due to climate change.

Section 8 of the RMA requires that the principals of the Treaty of Waitangi are taken into account when exercising functions under the Act. The applicant has approached the proposal on the basis of community and tangata whenua desire to see the discharge removed from the river. The applicant has provided for ongoing and sustained consultation with Māori.

15. CONSULTATION AND NOTIFICATION ASSESSMENT

The applicant requested that the application be publicly notified. The application was publicly notified on Thursday 7th October 2021 in the Hawke's Bay Today and Central Hawke's Bay Mail. Submissions closed at 17:00 on Friday 5th November 2021. In addition to these notices, direct notification was also sent to the parties listed in Table 1, Section 7.2 above.

As discussed above, two neutral submissions were received.

16. CONSENT DURATION

In recommending a consent duration, the reporting officer has considered a number of factors, including but not limited to the following:

- The duration of consent sought by the applicant (35 years)
- The Regional Policy Statement and Regional Resource Management Plan
- The level of information provided regarding the effects of the activities
- The potential effects of the activities
- Other municipal discharge comparisons

In terms of the RMA, sections 5(2) and 123(c) set out the following matters of relevance when considering consent duration:

- Enabling people to provide for the economic wellbeing (in the context of a statutory purpose)
- The economic effects on the consent holder of a particular term

Part 8.2.4.1 of the RRMP requires the Regional Council to grant:

(a) Land use consents for land use activities pursuant to section 9 of the RMA, and reclamations pursuant to section 13 of the RMA, for an unlimited period; and

(b) Resource consents for activities for a period of 20 to 35 years.

Part 8.2.4.2 of the RRMP goes on to state that exceptions to the above include (of relevance) '*(d) the type of activity has effects that are unknown or potentially significant for the locality in which it is undertaken*'.

As discussed in detail in the preceding sections of this report above, the cumulative effect on the wider Tukituki catchment and potential down gradient catchments (including the Porangahau catchment) has been quantified by the applicant and reviewed by HBRCs technical advisors. An adaptive management approach is considered suitable in this instance to respond to issues raised in the implementation of this consent which have not been envisioned and is provided for in the

recommended conditions of consent. The proposed activity has been assessed as resulting in no more than minor environmental effects, however it does not accord with two of the relevant objectives and policies. On balance however the conditions of consent ensure continual improvement for the term of the consent.

In addition, this must be balanced with the relevant sections of the Act (specifically s5(2) and 123(c)). The application represents long term investment for the community to facilitate the ongoing social wellbeing of the Takapau community.

POL TT6 – Decision Making Criteria, is also relevant to the assessment on duration. Section (3) of Pol TT6 provides criteria for decision making criteria for land use consents under Rule TT2 or TT2A shall:

(a) Have the same expiry date as any section 14 water irrigation consent for the land, or
(b) If there is no irrigation consent for the land, then a maximum duration imposed shall not exceed 35 years.

The proposed activities include land use consent for a non-complying activity under Rule TT2A and as such POL TT6 applies. Water take AUTH-125346-01 exists for the area of discharge. This consent expires on 31st May 2039 (in 17 years).

Additionally, the stance of the DHB has been taken into account here. They seek a 10 year consent to be issued to allow the applicant to allow five years for the establishment of the stages of the consent and five years to allow discharge parameters and long term improvements identified through the system review reports. The DHB consider that 10 years is appropriate given the uncertainty as to the treatment process and discharge quality parameters. The DHB have commented that '[after] *10 years the treatment process will have improved and the management of the process/plant optimised. At this stage a 35 year consent would be more appropriate*[92]'. The DHB have been party to the ongoing discussions had regarding the consent, iterations of the consent conditions and have been involved in the three pre-hearing meetings held. The DHB's original submission to the resource consent application did not note any concerns regarding the 35 year duration that was sought by the applicant, so although the DHBs concerns have been taken into account here, it is considered the adaptive management approach of the conditions of consent are suitable to alleviate the DHBs concerns while a longer consent duration will provide the applicant's rate payers with certainty into the medium / long term.

A 35 year consent is recommended given that the applicant has been able to quantify the environmental effects of the proposed activity. Although there are some minor adverse effects, these have been assessed and appropriate conditions of consent recommended to mitigate effects. As above, a 35 year consent will give surety for rate payers into the medium and longer term. Ongoing requirements of the conditions of consent ensure continual improvement during the course of the consent, including five yearly reviews.

17. MONITORING

Monitoring by Consent Holder

The conditions of consent, agreed with by the applicant, require a significant input from the applicant throughout the term of the consent.

[92] Email from Reynold Ball, Health Protection Officer, Hawke's Bay District Health Board (03/03/2022)

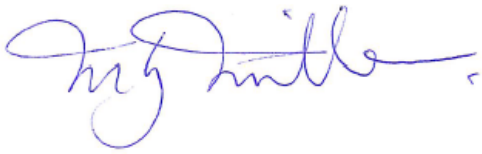
Monitoring by the Council

It is recommended that there be provision for Council to undertake monitoring during the installation of the proposed additional aspects (including the centre pivot, storage pond). Cost of this monitoring will be charged to the consent holder and shall be in accordance with the Annual Plan in place at the time.

The recommendation is that routine monitoring of this consent may be undertaken by a Council officer no more than once a year to check compliance with the consent conditions of the consent. The costs of this routine monitoring and any formal monitoring that may be established in consultation with the consent holder will be charged to the consent holder in accordance with the Annual Plan current at the time.

'Non routine' inspections may be made on other occasions if there is reason to believe that the consent holder is in breach of the conditions of this consent, e.g. following a complaint from a member of the public or following routine monitoring. The cost of non-routine monitoring will be charged to the consent holder in the event that non-compliance with conditions is determined, or if the consent holder is deemed not to be fulfilling the obligations specified in the RMA.

18. CONCLUSION

Recommending Officer	Review
	
Sophia Edmead **Senior Consents Planner** POLICY AND REGULATION GROUP	**Malcolm Millller** **Manager - Consents** POLICY AND REGULATION GROUP
4th October 2022	4th October 2022

Appendix 1 – Recommended Conditions of Consent

CONDITIONS RELATING TO CENTRAL HAWKE'S BAY DISTRICT COUNCIL WASTEWATER DISCHARGE CONSENTS
CONSENT HOLDER: CENTRAL HAWKE'S BAY DISTRICT COUNCIL
TAKAPAU WASTEWATER TREATMENT PLANT DISCHARGES

Definitions:

The following definitions apply across all resource consents:

Terminology Used	Definition
Active Storage	Means storage of treated wastewater ready for land discharge that has left the Takapau Wastewater Treatment Plant.
Activities	Means the Activities authorised by the Resource Consents
Consent holder	Means Central Hawke's Bay District Council
Council	Means the Compliance Manager of the Hawke's Bay Regional Council.
HRLP	Means High Rate Land Passage where the existing discharge from the Takapau Wastewater Treatment Plant to the Makaretu River occurs.
Land application	The process of application of wastewater to land, and in this case using irrigation.
Properties	Means the two land parcels to receive wastewater irrigation. These are 45 Burnside Road (Part Lot 1 DP 15623 – 23.95 ha & 4292 State Highway 2 Lot 1 DP 16445 – 18.9 ha).
Treated Wastewater	Means treated wastewater derived from the Consent Holder's Takapau WWTP.
WWTP	Means the Takapau wastewater treatment plant including all current and future treatment processes and storage facilities within the CHBDC land parcel located at 53 Burnside Road legally described as Lot 1 DP 17032, Central Hawke's Bay District.

With each condition number, there is a reference. This reference refers to:
GC: General Conditions; LD: Land Discharge; LU: Land Use: AD: Air Discharge; ID: Indirect Discharge.

Number	Wording
L1	**GENERAL CONDITIONS**
1 GC	These general conditions apply to Discharge consents AUTH-127077-01 (discharge to water), AUTH-127078-01 (discharge to air), and AUTH-127079-01 (discharge to land), and Production Land Use consent AUTH-127616-01, collectively called 'the Consents'.
L2	**Overarching Principles**
2 GC	Except as otherwise required by any other condition of the Resource Consents, the Activities must be carried out in general accordance with the following information provided by the applicant (collectively referred to as 'the Application') where the most recent information takes priority over older information in the event of any conflicts: (a) Central Hawke's Bay District Council (29 April 2021) *Takapau Wastewater Discharge Consent Application* [Cover Letter, Form 9, HBRC Form A and Form B] (b) Central Hawke's Bay District Council (April 2021) *Takapau Wastewater Treatment Plant Discharge Resource Consent Application and AEE* (document reference: TD.1_Takapau-Application_and_AEE-210428.docx) (updated via email on 30/01/2021) and Appendices A - K (c) Lowe Environmental Impact (12/2020) *Evaluation of Soils to Receive Takapau Wastewater* (document reference: T:B.15) (d) Lowe Environmental Impact (25/03/21) *Existing Farming System* (document reference: T:B.13) (e) Lowe Environmental Impact (29/03/21) *Existing / Future Farming System and OverseerFM Analysis* (document reference: T.C14a) (f) Lowe Environmental Impact (14/04/21) *Drummond Overseer and Planning Assessment* (document reference: T.C.14b) (g) CHBDC (20/08/2021) *Request for further information – Takapau Wastewater Discharge APP-126522* and Annexes A.1-G *(h)* Lowe Environmental Impact (November 2020) *Takapau Wastewater Treatment and Discharge Best Practicable Option. (document reference: T:C.12)* (i) Central Hawke's Bay District Council (24/09/21) *Request for Further Information – Takapau Wastewater Discharge APP-126522 – Second Response*. *(j)* Central Hawke's Bay District Council (22nd December 2021) *Takapau Wastewater Discharge Consent Application* (k) Lowe Environmental Impact (31st January 2022) *Memorandum Re: Takapau Discharge Property – Nutrient Application and Loss Update* (document reference: T:C.14c)

	Advice Note: If any conflict arises between the conditions of the consent and the application, the conditions of this consent will prevail.

L2	**Operational Matters**
L3	**Discharge Quality Parameters**
3 GC	During Stage 0 and Stage 1 (see Condition 4 for definition of stages), the consent holder must ensure the treated wastewater meets the following standards prior to discharge to the irrigation and High Rate Land Passage (HRLP): (m) The concentration of Carbonaceous five-day Biochemical Oxygen Demand (BOD_5) must not exceed an annual median of 40 g/m^3, or an annual 95th percentile of 70 g/m^3; (n) The concentration of Total Suspended Solids (TSS) must not exceed an annual median of 100 g/m^3, or an annual 95th percentile of 155 g/m^3; (o) The concentration of Ammoniacal Nitrogen (NH_4-N) must not exceed an annual median of 20 g/m^3, or an annual 95th percentile of 30 g/m^3; (p) The concentration of Dissolved Inorganic Nitrogen (DIN) must not exceed an annual median of 25 g/m^3, or an annual 95th percentile of 35 g/m^3; (q) The concentration of Dissolved Reactive Phosphorus (DRP) must not exceed an annual median of 4 g/m^3, or an annual 95th percentile of 6 g/m^3; and (r) The concentration of Escherichia coli (*E. coli*) must not exceed the following: i. Stage 0: 20,000 cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or 80,000 cfu/100 mL in more than 2 out of 12 consecutive monthly samples. ii. Stage 1 onwards: 2,000 cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or 10,000 cfu/100 mL in more than 2 out of 12 consecutive monthly samples. During Stage 2 (see Condition 4 for definition of stages), the Consent Holder must ensure that the treated wastewater meets the following standards prior to discharge to the irrigation and High Rate Land Passage (HRLP): (s) The concentration of Carbonaceous five-day Biochemical Oxygen Demand (BOD_5) must not exceed 40 g/m^3 in more than 8 out of 12 consecutive monthly samples, or 80 g/m^3 in more than 2 out of 12 consecutive monthly samples; (t) The concentration of Total Suspended Solids (TSS) must not exceed 100 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 180 g/m^3 in more than 2 out of 12 consecutive monthly samples; (u) The concentration of Ammoniacal Nitrogen (NH_4-N) must not exceed 20 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 30 g/m^3 in more than 2 out of 12 consecutive monthly samples; (v) The concentration of Dissolved Inorganic Nitrogen (DIN) must not exceed 25 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 35 g/m^3 in more than 2 out of 12 consecutive monthly samples; (w) The concentration of Dissolved Reactive Phosphorus (DRP) must not exceed 4 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 6 g/m^3 in more than 2 out of 12 consecutive monthly samples; and (x) The concentration of Escherichia coli (*E. coli*) must not exceed 2,000 cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or 10,000 cfu/100 mL in more than 2 out of 12 consecutive monthly samples. *Advice Note: Compliance will be demonstrated based on the samples required by Condition 40 [monitoring section]. The exceedance frequency allowed for the Treated Wastewater quality values identified above are based on monthly sampling over an annual 12-month monitoring period of 1 July to 30 June each year in accordance with the New Zealand Municipal Wastewater Monitoring Guidelines (NZWERF, Sept 2002) Table 13.2. If the frequency of sampling is more than monthly, the allowed numbers of annual exceedances will need to be amended to remain in line with the New Zealand Municipal Wastewater Monitoring Guidelines (NZWERF, Sept 2002) Table 13.2.*

L3	**Discharge Volumes and Timing**
4 GC	The timing of changes to the treatment and discharge regime shall be as follows: (a) Stage 0: To have ceased within 3 years of commencement of these consents; (b) Stage 1: To be operational within 3 years of commencement of these consents; and (c) Stage 2: To be operational within 5 years of commencement of these consents and then for the duration of this consent.
L4	**Filtration and Ultraviolet Treatment System**
5 GC	Within twelve months of the commencement date of the resource consents, the consent holder shall provide the Council (Compliance Manager) with a detailed UV treatment and filtration design report prepared by a suitably qualified and experienced independent expert for approval. The report shall demonstrate how the UV treatment system ensure the wastewater complies with Condition 3. Once the report is approved by the Council (Compliance Manager), the Consent Holder shall install and operate the filtration and UV disinfection treatment system in accordance with the certified design prior to Stage 1 of the consent (Condition 4). Thereafter the UV and filtration system will operate continuously at the time of discharge.
L4	**Land**
6 LD	The discharge of treated wastewater to the land via irrigation shall meet the following criteria: a) Stage 0: 0 ha of irrigation; b) Stage 1: Not less than 5 ha of irrigation; and c) Stage 2: Not less than 20 ha of irrigation.
7 LD	The Consent Holder must ensure the application rate of treated wastewater onto land or into land does not exceed: (a) 2 mm above field capacity; (b) 5 mm/h; and (c) 20 mm in any one application.
8 LD + LU	The consent holder shall ensure that the nutrient loading resulting from the discharge of wastewater onto and into land of the **Properties** does not exceed the following criteria on an annual average. Where the discharge of wastewater does not exceed the cap identified below, the consent holder may apply a fertiliser material to meet the nutrient requirement of the specific crop up to the limit specified in (a) and (b). Where an additional fertiliser material is applied to land, record must be kept in accordance with Condition 63. (a) Max N Load 200 kg N/ha/year (b) Max P Load 65 kg P/ha/year The above limits will apply until reviewed under Condition 76. *Advice Note: The above limits are not the overall limits for the whole farm or farming enterprise[93], only the Properties as defined in the glossary above.*
9 LD + LU	Meeting the requirements of Condition 8 shall be determined by calculating the nutrient loading to each block within the properties receiving wastewater. The nutrient loading will be based on the results of monitoring required in accordance with Condition 40, 63 and 64.
10 LD + AD	The Consent Holder must ensure that treated wastewater is not discharged to land closer than: (a) 20 m from any watercourse, whether flowing continuously or intermittently, including any open drain and wetland; (b) 20 m from any property boundary where there are no buildings; (c) 50 m from any bores; (d) 150 m from any dwelling house, milking shed, public place, amenity area or education facility or other building on any property bordering the land treatment area; (e) 50m from rare habitats, threatened habitats or at-risk habitats (as identified by HBRC at any time during the term of the resource consent); or, (f) 50 m separation distance from any sites of cultural significance known to exist at the time of approval for this resource consent, or any sites of cultural significance found to exist at any time following the grant of this resource consent.

[93] Farming Enterprise Means an aggregation of parcels of land within the same Surface Water Allocation Zones identified in Schedule XVI, held in single or multiple ownership (whether or not held in common ownership) that constitutes a single farming operating unit

11 LD	The Consent Holder must not discharge treated wastewater to land of the Properties: (a) Within 48 hours after the application of fertiliser; (b) Within 24 hours after any harvesting activity; or (c) When 50 mm or more rainfall has occurred in the previous 24 hour period as recorded at the Waipukurau Climate Station [No.31620].
12 LD	The consent holder must not graze animals or harvest any crops on land that has been irrigated with wastewater for at least 48 hours, or while the pasture is wet with irrigated wastewater, whichever is longer. *Advice Note: The consent holder should ensure they are aware of requirements of other regulatory bodies (for example the Ministry of Primary Industries, Ministry of Health) regarding the use of land irrigated with wastewater for primary produce.*
13 LD	In the event that storage has reached 80 % of the relevant volumes specified by Condition 15 of working capacity and river flow conditions as set out in Condition 14 do not permit discharge, irrigation can occur at a rate that exceeds those in Condition 7 but no more than 50 mm in any one application. The consent holder shall notify the Council within 3 days of exceeding the discharge rates specified by Condition 7 with evidence that storage capacity had reached 80% and that river flows were such that wastewater could not be discharged to the river in accordance with Condition 14. *Advice Note: Storage capacity is measured on a volume basis and excludes freeboard capacity.*
L4	**HRLP**
14 ID	The discharge of treated wastewater to the HRLP which drains to the Makaretu River shall only occur when the field capacity in accordance with Condition 7 has been reached and storage capacity has exceeded 80%. Any discharge of treated wastewater to the HRLP shall meet the following criteria: a) Stage 0: i. The flow rate averaged over the preceding 365 days of the discharge shall not exceed 216 m^3/d. b) Stage 1: i. When the river flow is below 4,735 L/s (half median) there shall be no discharge to the Makaretu River; ii. When the river flow is greater than 4,735 L/s (half median) and less than 9,470 L/s (median), the discharge shall not exceed 200 m^3/d; iii. When the river flow is greater than 9,470 L/s (median) and less than 28,410 L/s (3x median), the discharge shall not exceed 750 m^3/d; and iv. When the river flow is greater than 28,410 (3x median), the discharge shall not exceed 1,000 m^3/day. c) Stage 2: i. When the river flow is below 9,470 L/s (median) there shall be no discharge to the Makaretu River; ii. When the river flow is greater than 9,470 L/s (median) and less than 28,410 L/s (3x median), the discharge shall not exceed 800 m^3/d; and iii. When the river flow is greater than 28,410 (3x median), the discharge shall not exceed 1,100 m^3/day. *Advice Note: River flow shall be measured for the Tukituki River at Tapairu Road at 9 am and the ability to discharge shall span a period of 24 hr to 9 am the following morning. These flows are considered representative of the Makaretu River, at least for the purposes of managing discharges as part of this consent.*
L4	**Storage**
15 GC	The Consent Holder shall provide the following volume of active storage: a) Stage 0: 0 m^3; b) Stage 1: Use of the existing treatment pond to provide not less than 2,000 m^3; and c) Stage 2: Construction of a new pond with a volume not less than 18,000 m^3 and a freeboard level appropriately in excess of the 1:100 flood level as certified by a Chartered Professional Engineer specialising in civil and flood engineering.

	Advice Note: Stage 1 provides for the use of the existing pond for storage until a new pond is built as required by Stage 2.
L3	**Farm Management**
16 LU	The Consent Holder shall prioritise using wastewater over the use ground or surface water to provide for the growth of pasture and crops. The Consent Holder shall ensure that where groundwater or surface water is used to supplement the use of wastewater on site, records shall be made demonstrating that wastewater was not available for use. *Advice Note: Fertiliser can also be used to supplement nutrient in wastewater up to the limit as noted in Condition 8 [N and P loading limit condition].* *Advice Note: Clean water is available from a number of sources, including groundwater and surface water. The approval process for obtaining this water is outside this consent process.*
17 LU	The Consent Holder shall exclude all stock (other than sheep) from the beds and margins of any lake, wetland and flowing river (whether intermittent or permanent) within 3 months of the grant of this consent. Notwithstanding the above, the consent holder can graze permanently fenced riparian margins for weed control purposes providing: a) The consent holder shall keep a record of how many the date and period in time the riparian margins are grazed; b) The total grazing period in any year does not exceed 7 days; and c) The fenced riparian margin shall be grazed no more than twice in any year during the period 1 November to 30 April.
18 LU	The Consent Holder shall ensure that: a) Records specified within Schedule XXI of the Tukituki Plan Change 6 are retained for each year (1st June to 31st May) enabling a nutrient budget to be prepared; or Copies of Nutrient Budget input and output files have been prepared in accordance with an industry programme approved by HBRC.
19 LU	Within 3 months of the commencement of the consent, the Consent Holder shall prepare a Farm Environmental Management Plan in accordance with Schedule XXII of the Tukituki Plan Change 6 (PC6) for properties receiving wastewater. This shall be provided to the Council (Manager Compliance) for approval. The FEMP shall be considered approved unless the Council's Regulatory Manager, within 20 working days of receiving the plan, refuses to approve it, and outlines its reasons in writing. If the FEMP is not approved, an amended FEMP must be submitted for approval. The Farm Environmental Management Plan shall include: a) A Nutrient Budget incorporating the measurement or modelling of whole of property nutrient losses (kg/ha/year) including farm and irrigation system inputs calculated using the annual records specified in Schedule XXI and the Overseer Nutrient Budget model (or an alternative model approved by Hawke's Bay Regional Council); b) A Phosphorus Management Plan including details specified in Schedule XXII; c) Alongside all other information relevant to the farm property required for a Farm Environmental Management Plan; and d) Identifies ways of actively reducing the amount of synthetic fertiliser applied to the irrigated area *Advice Note:* *Either:* - *One FEMP should be provided for the whole farm property or farming enterprise[94] that the properties wastewater is irrigated to consist of; or,* - *The whole farm enterprise is required to have a FEMP in accordance with Rule TT2 of the RRMP and that aligns with Condition 19 of this consent.*

[94] Farming Enterprise Means an aggregation of parcels of land within the same Surface Water Allocation Zones identified in Schedule XVI, held in single or multiple ownership (whether or not held in common ownership) that constitutes a single farming operating unit

20 LU	The consent holder shall work with the farm manager and the FEMP provider to review the FEMP yearly to understand the management processes being carried out on the farm including the application of synthetic fertiliser and to actively minimise the use of synthetic fertiliser across the farm area. This FEMP review shall be provided to the Council (Manager Compliance) yearly.
L3	**Odour and Aerosols**
21 AD	The discharges and activities authorised by this consent shall not result in odour (or spray drift) that is offensive or objectional to the extent that it causes an adverse effect on the environment at or beyond the boundary of the site. *Advice Note: An odour or spray drift will only be considered offensive or objectionable after a Council enforcement officer has considered the Frequency, Intensity Duration, Offensive and Location of the odour or spray drift (i.e. the FIDOL Factors). The property boundary is defined as the edge of any of the 'properties' defined in this consent, adjacent to property that is not identified in the definition of 'properties' of this consent.*
22 AD	Prior to the discharge of **treated wastewater** to land the Consent Holder must install a weather station on the site to be used for land application of treated wastewater and the weather station shall be maintained at all times to provide data for managing the land application system. At a minimum this must include: a) Wind speed and direction at 6 m above the ground ; and b) Rainfall at ground level; and c) Air temperature at 1.5 m and 6 m above ground; and d) Relative humidity
23 AD	The meteorological data collected under Condition 22 shall be: a) Collected in general accordance with the Good Practice Guide for Air Quality Monitoring and Data Management, Ministry for the Environment (2009), or superseding document b) Continuous for the duration of the consent comprising 1 minute data, collected and averaged to 10 minutes and 1 hour time periods; c) At a point that is representative of local weather conditions across the site d) The wind speed and direction instrumentation shall be able to operate reliably down to a maximum wind speed threshold of 0.1 m/s e) The consent holder shall provide the Hawke's Bay Regional Council information collected from the weather station required by Condition 22 as soon as possible upon request.
24 AD	The Consent Holder must operate the system such that irrigation of treated wastewater automatically ceases when: • the 10 minute average wind speed at the site exceeds 10 m/s; or • where the *E.coli* concentration in treated wastewater for the most recent sample is greater than 10,000 cfu/100 mL and the 10 minute average wind speed at the site exceeds 4 m/s from any wind direction *Advice Note: The purpose of this condition is to avoid adverse health effects where there is the potential for winds to cause spray drift that may contain pathogens to be carried beyond the property boundary upon which the activity is taking place. This condition applies only to the discharge of wastewater – clean water irrigation is not subject to the same shut down requirements.*
L3	**Signage**
25 GC	The Consent Holder shall submit to Council (Manager Compliance) for approval prior to the commencement of any irrigation to land the detailed design, wording and location of signs to be erected on the boundary of the properties (as defined the definitions of this consent) at State Highway 2 and Burnside Road, as well as the true right bank of both upstream and downstream of the Makaretu River bridge. The purpose of the signage will be to inform the public of the activity being carried out on the site and to identify potential risk and hazards that may result from the activity. The wording of the signage shall be large enough to be read by a person with normal eyesight at 20 m and shall advise of the presence of the treated wastewater discharge in the area. The sign location, design and wording shall be considered approved unless the Council's Regulatory Manager, within 20 working days of receiving the details, refuses to approve it and outlines its reasons in writing. If the signage details are not approved, an amended plan must be submitted for approval.

	The consent holder shall erect and maintain these signs in accordance with the plans approved by the Council (Manager Compliance) for the duration of the consent.
L3	**Planting**
26 AD	The Consent Holder shall plant and maintain for the duration of this consent a vegetation screen along the property boundary (as defined the definitions of this consent) with State Highway 2. The planting shall be double fenced to ensure survival of the plants. Irrigation shall not commence until such planting has been completed.
L3	**Representative**
27 GC	The consent holder shall nominate a person who is responsible for the maintenance of the wastewater treatment system and the return of information (as required by conditions of this consent). The consent holder shall advise the Council (Manager Compliance) who this person is within one month of the commencement date of this consent and within ten working days of any change occurring.
L3	**Sampling Port**
28 GC	From the commencement of these Consents, the Consent Holder must install and maintain a sampling port in the pipeline to the land treatment system and the HRLP system.
L3	**Metering**
29 GC	From the commencement of these Consents, the Consent Holder must install and maintain flow meters to measure and record the wastewater volumes discharged: a) into and out of the Takapau WWTP; b) to the HRLP; c) into and out of the storage pond; and d) to the land treatment area. The measuring device and recording system shall be maintained to continually measure and record the rate and volume of effluent discharged from the oxidation pond. Measuring and recording shall be at intervals not exceeding 30 minutes and to an accuracy of +/- 5%.
30 GC	Within three months following the installation of the flow meter, and every five years thereafter for the duration of Consents, the Consent Holder must have the flow meters, required by Condition 29, verified in accordance with the manufacturer's specifications. The Consent Holder must provide to the Council's Regulatory Manager, an in-situ flow meter verification certificate confirming the validity of the meters within one month of the verification being completed.
31 GC	Within three months of the commencement of these Consents, the Consent Holder must provide the Council's Regulatory Manager with near real-time treated wastewater discharge information recorded and collected from the flow meters referred to in Condition 29. This information must be recorded at 15minute intervals and be provided automatically on a daily basis in a format compatible with the Council's database.
L3	**Infrastructure Inspection**
32 GC	The Consent Holder must ensure that the physical infrastructure of the pond system is inspected every month. Any damage to pond embankments, or signs of pond seepage must be identified, noted, and fixed as soon as practicably possible.
33 LD	The Consent Holder must ensure that the physical infrastructure of the land treatment system and the land treatment area are inspected every week when operational, and that relevant parts of the systems are also inspected whenever any alarms associated with the systems are activated.
34 ID	The Consent Holder must ensure that the physical infrastructure of the HRLP system is inspected every month and that relevant parts of the systems are also inspected whenever any alarms associated with the systems are activated.
35 GC	If any blockages and/or breaks are identified in an inspection under Condition 32 and 33 or otherwise, the system affected must cease operation until the blockage and/or break is remedied, and the Consent Holder must notify Council's Regulatory Manager within 48 hours of identifying the blockage and/or break.

36 GC	Records of the inspections made in accordance with Condition 32, 33 and 34, and any resulting system maintenance, must be kept and made available to the Council on request and a copy be provided within the Annual Report required under Condition 67.

L2	**Monitoring**
L3	**General**
37 GC	The Consent Holder must ensure that all sampling equipment, including meters and field measurement devices, are maintained in good working order by suitably qualified persons in accordance with the manufacturer's instructions and industry best practice guidelines. Records of calibration shall be kept and made available to the Council upon request.
38 GC	In respect of monitoring required by the Consents, the following apply: (a) All monitoring and sampling techniques employed in respect of the conditions of the Resource Consents must be carried out by suitably experienced and qualified persons; (b) All analytical testing other than on-site measurements, undertaken in connection with these Resource Consents must be performed by a laboratory that is IANZ accredited for the analytical tests or any other method approved in advance in writing by the Council Manager; (c) All water sample analyses must be undertaken in accordance with the methods detailed in the "Standard Methods For The Examination Of Water And Waste Water, 2017" 23rd edition by A.W.W.A., A.P.H.A. and W.E.F., or any other method approved in advance in writing by the Council Manager; and (d) If any monitoring sites are identified as unsuitable, alternative monitoring sites must be identified and developed within a reasonable time after consultation with the Council Manager.
39 GC	Results of monitoring collected in accordance with Conditions 40 to 56 below must be transferred within 10 working days of their receipt to the Council in a format compatible with Council systems.
L3	**Wastewater**
40 GC	From the commencement of these Consents, the Consent Holder must take samples of treated wastewater from the sampling port(s) (installed in accordance with Condition 28), once per month in any month that a discharge to the land treatment area or the HRLP system occurs, and while the discharge is occurring. The sample must be analysed for: (a) pH (b) $ScBOD_5$; (c) Total Suspended Solids; (d) Total Nitrogen; (e) Nitrate Nitrogen (NO_3-N); (f) Ammoniacal-Nitrogen (NH_4-N); (g) Nitrite Nitrogen (NO_2-N); (h) Total Phosphorus; (i) Dissolved Reactive Phosphorus (DRP); (j) Sodium (Na); (k) Potassium (K); (l) Magnesium (Mg); (m) Calcium (Ca); and (n) Escherichia coli (*E. coli*).
41 GC	From the commencement of these Consents, the Consent Holder must take a sample of treated wastewater from the sampling port(s) (installed in accordance with Condition 28), once per year in any month that a discharge to the land treatment area occurs, and while the discharge is occurring. The sample must be analysed for helminth eggs.
L3	**Soils**

42 LD	The Consent Holder must take annual composite soil samples from areas that align with blocks detailed in nutrient budget reporting and have received treated wastewater within the previous 12 month period (starting 1 October and ending 30 September) for the duration of this Discharge Consent. A minimum of ten 75 mm depth composite samples must be obtained from each paddock, and must be analysed for the following: (a) pH; (b) Exchangeable Sodium (Na); (c) Exchangeable Sodium percentage (Na); (d) Exchangeable Potassium (K); (e) Exchangeable Magnesium (Mg); (f) Exchangeable Calcium (Ca); (g) Phosphorus (Olsen); (h) Total Phosphorus (i) Sulphate-S; (j) Total Nitrogen (TN); and (k) Cation Exchange Capacity.
43 LD	The Consent Holder must take composite soil samples every five years from areas that align with blocks detailed in nutrient budget reporting and have received treated wastewater within the previous five year period (starting 1 October and ending 30 September) for the duration of this Discharge Consent. A minimum of ten 75 mm depth composite samples must be obtained from each paddock, and must be analysed for the following: (a) Total Arsenic (b) Total Cadmium (c) Total Chromium (d) Total Copper (e) Total Lead (f) Total Mercury (g) Total Nickel (h) Total Zinc
44 LD	The consent holder shall install and maintain telemetered soil moisture measuring equipment (Aquaflex or similar) in each block detailed in the nutrient budget reporting. The location and installation details of any relocated or new soil moisture measuring equipment to be installed shall be agreed upon with the Council (Manager Compliance), prior to its installation. Records of the soil moisture in each block detailed in the nutrient budget shall be kept and provided to the Council (Manager Compliance) upon request.
45 LD	The soil moisture monitoring equipment (required by Condition 44) shall be calibrated in accordance with the manufacturers/installer's recommendations, and regularly maintained to ensure that it operates correctly. Records of both calibration and maintenance shall be kept and provided to the Council (Manager Compliance) upon request.
L3	**Groundwater**
46 GC	The Consent Holder shall monitor groundwater quality quarterly at the wells identified on the Plan shown in Appendix 1 and at the wells specified below: - Well 17053 - Well 17054 - Well 17124 - Well 17125 - Well 17126 The monitoring shall be undertaken in accordance with the MfE Groundwater sampling protocols (2006) or any subsequent updated document.
47 GC	The Consent Holder must measure and record the static water level of all bores identified in Condition 46 prior to purging and sampling. Samples collected from the bores and shall be analysed for the following parameters: (a) Temperature (field measurement); (b) pH (field measurement); (c) Electrical Conductivity (EC); (d) Chloride (Cl); (e) Nitrate-Nitrogen (NO_3); (f) Ammoniacal-Nitrogen (NH_4N); (g) Nitrite-Nitrogen (NO_2);

	(h) Dissolved Reactive Phosphorus (DRP); (i) *Escherichia coli* (*E. coli*); and (j) Sodium (Na).
L3	**Surface Water Chemistry**
48 ID	Within 3 months of the commencement of these consents, the consent holder shall provide a plan to the Council (Manager Compliance) for approval showing the surface water monitoring points located: a) 50 m upstream of the discharge location; b) 50 m downstream of the discharge location; and c) 400 m downstream of the discharge location. The surface water monitoring points plan shall be considered approved unless the Council's Regulatory Manager, within 20 working days of receiving the plan, refuses to approve it, and outlines its reasons in writing. If the plan is not approved, an amended plan must be submitted for approval. The Consent Holder shall monitor surface water quality in location approved by the Council (Manager Compliance) the months of November, March and July in the locations. *Advice Note: The exact location of the monitoring sites shall be confirmed in consultation with the Council's Regulatory Manager. Should the monitoring locations become unsuitable or inaccessible for sampling due to reasons beyond the consent holder's control during the term of the consent, the consent holder shall identify new monitoring locations, in consultation with the Council's Regulatory Manager.*
49	Left Intentionally Blank
50 ID	The Consent Holder must monitor the following parameters at the sites identified in Condition 48: (a) pH (field measurement); (b) Temperature (field measurement); (c) Dissolved oxygen (field measurement); (d) Total Suspended Solids (TSS); (e) scBOD5 (Dissolved carbonaceous biochemical oxygen demand being material passed through a GF/C filter); (f) Total Nitrogen (TN); (g) Nitrate Nitrogen (NO_3); (h) Ammoniacal Nitrogen (NH_4N); (i) Nitrite-Nitrogen (NO_2); (j) Dissolved Reactive Phosphorus (DRP); (k) Total Phosphorus (TP); and (l) *Escherichia coli* (*E. coli*).
L3	**Macroinvertebrate Sampling**
51 ID	The Consent Holder must have a suitably qualified and experienced freshwater ecologist undertake macroinvertebrate sampling in the Makaretu River once between January and April within the first year of the commencement of this consent, once between January and April in the fourth year after the commencement of this consent and thereafter between January and April every five years. The macroinvertebrate assessment must be undertaken following a period of at least three weeks without a flood event and during a period of stable flow. The timing of the monitoring must be confirmed by Council's Regulatory Manager prior to the commencement of the monitoring. The locations of the assessments and sampling shall be a collection of at least 5 replicate 0.1 m^2 surber samples from at least three upstream and three downstream sampling sites, pooled to give multiple composite upstream and downstream samples. *Advice Note: A flood event is considered to be when the Makaretu River is at and above 28,410 L/s (3x median flow) as measured for the Tukituki River at Tapairu Road.* Advice note: the ecological reporting shall be undertaken in the fourth year of the consent and then every five years afterwards to allow the results to feed into the system review report, required by Condition 68, below.

52 ID	The Consent Holder must ensure that the macroinvertebrate sampling referred to in Condition 51 above follows Protocols C3 (Hard-bottomed quantitative), P3 (full count with subsampling option) and QC3 (Quality control for full count with subsampling option) from the Ministry for the Environment's "protocols for sampling macroinvertebrates in wade-able streams" (Stark et al. 2001). This shall involve: (a) Collection of five replicate 0.1 m^2 surber samples at random within a 20 m section of riffle habitat at each sampling site; (b) Full count of the macroinvertebrate taxa within each replicate sample to the taxonomic resolution level specified for use of the Macroinvertebrate Community Index (MCI); and (c) Enumeration of the results as taxa richness, MCI, QMCI, % EPT taxa and % EPT individuals.
L3	**Chlorophyll a Monitoring**
53 ID	Consent Holder shall have an appropriately experienced and qualified freshwater ecologist undertake assessments in the Makaretu River once between January and April at the commencement of the consent, once within the fourth year after the commencement of the consent and thereafter every five years. This assessment shall include the percentage cover, biomass, chlorophyll *a*, AFDW and community composition of periphyton, filamentous algae and cyanobacterial mats in run habitat, as close as possible to the sites selected for macroinvertebrate sampling above. The periphyton and algae assessment is to include: (a) A visual assessment of the percentage cover of both filamentous algae and algal mats (to the nearest 5%) at 5 points across four transects encompassing run habitat and extending across the width of the river at each sampling site. The visual monitoring methods shall follow the protocols outlined in Appendix 2 of 'A periphyton monitoring plan for the Manawatu-Wanganui Region' (Kilroy et al 2008). Reported estimates shall include: i. Percentage cover of visible stream or river bed by bacterial and/or fungal growths (sewage fungus) visible to the naked eye; ii. Percentage cover of visible stream or river bed by filamentous algae more than 2 cm long; iii. Percentage cover of visible stream or river bed by diatoms or cyanobacteria mats more than 0.3 cm thick; iv. Percentage cover of visible stream or river bed by diatoms less than 0.3 cm thick; and v. Percentage cover of visible stream or river bed that is clean. The collection of a periphyton sample at the same established monitoring sites and transects, using method QM-1b from the Stream Periphyton Monitoring Manual (Biggs & Kilroy 2000). Analysis of periphyton samples shall follow the Biggs and Kilroy (2000) guidelines for chlorophyll *a* analysis. Advice note: the ecological reporting shall be undertaken in the fourth year of the consent and then every five years afterwards to allow the results to feed into the system review report, required by Condition 68, below.
L3	**Cultural Health Index Monitoring Protocols**
54 GC	Within two years of the commencement of this consent, the Consent Holder must invite a suitable expert in tikanga and mauri of freshwater bodies representing the interests of the Mana whenua of Takapau to undertake Cultural Health Monitoring according to their respective tikanga. If the engagement is accepted, the Consent Holder must commission the suitable expert in tikanga and mauri of freshwater bodies representing the Mana whenua of Takapau or nominees (as advised) to undertake Cultural Health Monitoring in compliance with the Cultural Health Monitoring protocol prepared in accordance with Condition 55. If engagement is not accepted, the consent holder must continue to invite a suitable expert in tikanga and mauri of freshwater bodies representing the interests of the Mana whenua of Takapau to undertake Cultural Health Monitoring to their respective tikanga every two years. The consent holder shall keep records of engagement and consultation with the Mana whenua of Takapau and provide this to the Council on request.
55 GC	If the engagement is accepted to undertake Mauri Cultural Health Monitoring as set out in Condition 54, the Consent Holder must commission the person or body identified in Condition 54 to prepare a Cultural Health Monitoring protocol that as a minimum, must: (a) Describe the relationship of tangata whenua to the discharge area and the sites of interest in or near the locations to which these Permits apply; (b) Describe the tikanga relevant to the proposed cultural monitoring (including kaitiakitanga, mauri of awa, whenua, tangata, whanaungatanga and te ha tawhirimatea), the activities, and the site(s);

	(c) Identify and map (with map references) the site(s) to be monitored; (d) Set out the frequency of monitoring; (e) Describe the procedures required to access the application site for the monitoring (in particular health and safety requirements); (f) Identify the parameters and methods used for the monitoring and assessments of effects on cultural health; (g) Set out the matters to be included in the Cultural Health Monitoring Report and the frequency of the reporting obligations; and (h) Set out the procedures for amendments to the Cultural Health Monitoring protocols. *Advice Note: There are multiple tools for assessing cultural health, including the Mauri Compass. The selection of the methodology is up to the body representing Māori interests.*
56 GC	The Consent Holder must provide a copy of the Cultural Health Monitoring protocol, or any amended version, and any subsequent Cultural Health Monitoring Reports to the Council Manager within 1 month of receiving it. *Advice Note: These documents are the intellectual property of the Māori cultural health experts and are not subject to certification or review by the Consent Holder or Council.*

L2	**Plans**
L3	**Monitoring Plan**
57 GC	No later than six months after the commencement of this Consent, the consent holder shall submit to Council's Regulatory Manager for certification, a Monitoring Plan (MP), completed by a suitably qualified and experienced person. The MP shall be designed to monitor any effects of the irrigation system, storage of wastewater in the oxidation pond (e.g. though leakage), impacts on groundwater impacts on surface water. The MP shall include, but not be limited to: (a) Details of the type, frequency, location, methodologies and procedures to carry out the monitoring required by Conditions 37-56 hereon. (b) Recommendations of proposed survey dates, for existing and proposed monitoring. (c) Identification of any best practise guidelines that should be followed. (d) Identification of how the Monitoring Plan may be reviewed as a result of ongoing monitoring or recommendations made in reports on ongoing monitoring submitted pursuant to Conditions 37-56 hereon, system review report pursuant to Condition 68 hereon, or review Conditions 75 and 76. The MP shall be considered certified unless the Council's (Manager Compliance), within 20 working days of receiving the MP, refuses to certify it, and outlines its reasons in writing for not certifying the MP. If the MP is not certified, an amended MP must be submitted. Once certified by the Council (Manager Compliance), the MP shall be implemented within three months.
L3	**Operational and Management Plan**
58 GC	No later than six months after the commencement of this Consent, the Consent Holder must submit to the Council (Manager Compliance) for technical certification an Operation and Management Plan (OMP) detailing (but not limited to) the following items: (a) A description of the treatment plant, storage, land application system and the HRLP system, including a site map indicating the location of discharge infrastructure, the land treatment area, and monitoring sites; (b) Intended operation and maintenance procedures for the land treatment system and the HRLP system, including the reduction of pathogens and how the systems will be operated and maintained to comply with these Conditions and the Conditions of Discharge Consents AUTH-127078-01, AUTH-127079-01 and AUTH-127077-01; (c) A methodology statement and summary setting out recent and proposed infiltration management. This should include forward work to reduced infiltration into the reticulated wastewater system, and a timeline for carrying out these works. (d) The procedures to be implemented to ensure that, where practicable, treated wastewater is discharged as a priority to land in accordance with the general conditions, including record-keeping procedures to demonstrate that the prioritisation has occurred; (e) A procedure to utilise the irrigation system to discharge at a higher application rate when storage is full and river flow conditions do not allow for the use of the HRLP system; (f) The measures to be implemented to control, regulate and record irrigation application, including application depths and details about how the management blocks within the land treatment area will be managed; (g) Cropping, pasture, grazing and harvesting management and maintenance procedures; (h) The frequency of flushing of the irrigation pipes and the circumstances under which pipe flushing will occur and the location flushing will occur to reduce any effect on nearby residential receptors; (i) Measures to ensure the treated wastewater irrigated remains aerobic; (j) On-site responsibilities, including operation and maintenance of the wastewater treatment facilities and pipelines to the river and land discharge points; (k) Key operational matters, including daily, weekly and monthly maintenance checks, and the keeping of a maintenance register to record the details of all maintenance events and any system malfunctions; (l) Monitoring and reporting procedures required to demonstrate compliance with these conditions (to water, to land, to air and to groundwater); (m) A description of any other on-farm operations affecting nutrient loading or leaching within the land treatment area (e.g. grazing, crops, fertiliser application); (n) A risk assessment plan and contingency plans in the event of system malfunctions or breakdowns; (o) Procedures for receiving, recording and responding to all complaints in accordance with Conditions 70 and 71; (p) A protocol for managing accidental discovery of artefacts of historic, archaeological or cultural significance during construction;

	(q) Mitigation and contingency measures for controlling odour (including the flushing of lines with freshwater), aerosols, ponding and run-off in and from the land treatment area, wastewater treatment and maintenance activities; (r) Procedures for the wind speed shut-down required by Condition 24; (s) Procedures for the rainfall induced shut-down required by Condition 11; and (t) Details of how changes in wastewater composition and volume are to be managed and measures to ensure ongoing compliance with conditions. *Advice note: Any freshwater required to be used on site will require consent where it cannot meet the relevant permitted activity standards of the plan or the conditions / description of existing water take consents.*
59 GC	The Consent Holder must review the OMP required by Condition 58 by 31 July of each year, following commencement of the consent. This review shall incorporate any proposed changes to the management of the activities. Following each review, the OMP, including any proposed changes must be submitted to the Council (Manager Compliance) for technical re-certification before 30 November of the same year.
60 GC	The Consent Holder must undertake the activities in accordance with the OMP that is most recently certified pursuant to Condition 58.
L3	**Education Plan**
61 GC	Within 12 months of the commencement date of this consent, the Consent Holder must prepare and implement a Wastewater Education Plan (WEP) detailing a multi-faceted programme designed to increase the public's understanding and awareness of how their [the public's] actions/activities can influence wastewater volumes, and the ways in which the public can reduce water use. Within six months after submitting the WEP to the Council Manager, the Consent Holder shall commence delivery of the WEP. The Plan shall be reviewed and updated annually.

L2	**Reporting and Notification**
62 GC	Records of the inspections carried out in accordance with Conditions 32, 33 and 34 and any resulting system modifications must be recorded in the Annual Monitoring Report as required by Condition 67.
63 GC	The Consent Holder must maintain a record of all irrigation activities authorised by this resource consent that occur within the land treatment area. This record must include but not be limited to: (a) The date, time, location and volume of each irrigation (both of wastewater and water); (b) The date, time, location, mass (kg) and rate (kg/N/ha or kg/P/ha) of any nitrogenous and phosphorus material applied; (c) The total cumulative nitrogen applied from all sources to each irrigation run over the period 1 July each year to 30 June the following year; (d) The hydraulic loading (application depth in mm) for each application of wastewater to each irrigation run; (e) The volume (m^3) of wastewater applied to each irrigation run for each application; (f) The area of pasture or crop that were irrigated in each block, and for crops, the type of crop irrigated, and; (g) The date and time of pipeline flushes when they occur. Records shall be reported included in the Annual Monitoring Report as required by Condition 67.
64 GC	The mass and rate of total nitrogen applied to each irrigation run or irrigation area during each application of wastewater, as specified in Condition 63 of this consent, shall be calculated as follows: a) The average monthly total nitrogen concentration (g/m^3) shall be calculated by averaging the last wastewater sample from the previous month and the wastewater sample in the month to be calculated. These samples shall be taken in accordance with Condition 40 of this consent. b) The average monthly total nitrogen concentration for each month shall then be multiplied by the volume (m^3) of wastewater applied to each irrigation run or area, in order to calculate the mass of total nitrogen applied (kg) per application to each irrigation run or area. c) The mass of total nitrogen applied (kg) per application shall then be divided by the area (ha) of each irrigation run or irrigation area to calculate the rate (kg N/ha) of nitrogen loading per application per irrigation run/area. d) The area (ha) irrigated during each application of wastewater shall be calculated by multiplying the distance the travelling irrigator travelled by the irrigation run/area width, or the segment/area irrigated by each centre pivot.

65 GC	The Consent Holder must maintain a record of all HRLP discharges authorised by this resource consent. This record must include but not be limited to: (a) The date, time, location and volume of each discharge; and (b) The river flow at the time of the discharge as measured at the Tukituki River at Tapairu Road Records shall be reported included in the Annual Monitoring Report as required by Condition 67. *Advice note: In accordance with Condition 14, River flow shall be measured for the Tukituki River at Tapairu Road at 9 am and the ability to discharge shall span a period of 24 hr to 9 am the following morning.*
66 GC	The Consent Holder must notify the Council Manager as soon as practicable and no later than within two working days of 24 hours from the identification of any actual or potential non-compliance or when it becomes evident that a breach of consent conditions is about to occur. For conditions requiring compliance with a particular water quality standard, notification to the Council Manager is required within two working days 24 hours of receipt of the water quality analysis result from the Laboratory of the non-compliance.
L3	**Annual Monitoring Report**
67 GC	By 31 September of each year (commencing 31 July 2023) the Consent Holder must provide the Council's Regulatory Manager an annual monitoring report for the 12 month period ending the previous 30 June. The annual monitoring report must include (but not be limited to): (a) A summary of all irrigation activities required by Condition 63 (b) A summary of the nutrient budget and phosphorus management plan and summary of the FEMP review undertaken in accordance with Condition 19 and 20. (c) Results of sampling and a summary and interpretation of analyses and records collected in accordance with these conditions; (d) Testing to ensure irrigation infrastructure is operating efficiently including a summary of any upgrades or repair that has been carried out. (e) Comment on compliance with each of these conditions, including the effluent standards; (f) A summary of inspections made on the physical infrastructure in accordance with Conditions 32, 33 and 34; (g) Results of soil sampling required by Condition 42 and 43, and an analysis to determine whether any material change in soil quality has occurred and actions taken to remedy any nutrient deficiency or excess; (h) Results of groundwater monitoring required by Conditions 46 and 47, including an assessment of whether there has been a decline in groundwater quality due to the activities; (i) Results of soil moisture monitoring required by Conditions 44 and 45 including graphs of soil moisture content against key soil moisture reference points including saturation point, wilting point, field capacity and any defined irrigation trigger points. (j) Results of surface water monitoring required by Conditions 48 and 50, including an assessment of whether there has been a decline in surface water quality due to the activities; (k) General comment on any non-compliances and operational problems; (l) Details of any works undertaken or proposed to improve the performance of the treatment system; and (m) A copy of the complaints register required by Condition 71.
L4	**System Review Report**
68 GC	Within five years of the commencement date of this consent, and there after every 5 years, the Consent Holder must prepare a 'System Review Report' including but not limited to summaries of: (a) the volume applied to land and discharged to the HRLP; (b) when the HRLP was used and the river flow conditions at the time; (c) changes that have been made to the wastewater treatment plant and details of changes proposed; (d) opportunities to improve the treatment plant performance, and discharge standards, to reflect the requirements for the land application system, noting that this may see the effluent standards relaxed to allow higher wastewater loads and less synthetic fertiliser; (e) all monitoring undertaken as required by this consent, including, but limited to, Mauri monitoring required by Conditions 54, 55 and 56, macroinvertebrate monitoring required by Condition 51, chlorophyll a monitoring required by Condition 53 and may include additional monitoring undertaken by the Consent Holder; (f) Undertake assessment of the appropriateness of flows of the Tukituki gauging site as a predictor of median flows in Condition 14; (g) Undertake assessment of application rate regime and potential adjustments to loading rates in Conditions 7 and 8 to optimise overall nitrogen and phosphorus contribution to ground and surface water. Changes shall be consistent with FEMP updates as required by AUTH-127616 (production land use consent); and,

	(h) storage utilisation and opportunities to better utilise it to avoid the use of the HRLP. Further, management of the system can be updated, with proposed changes to be made as necessary to the Operation and Management Plan after an annual review by the Consent Holder. *Advice Note: The timing of monitoring required by Condition 51 and 53 will be the year before the system review report is prepared. Point (d) should take into account impacts on surface water from any suggestion of relaxed standards.*
69 GC	Following the completion of the System Review (Condition 68), the Consent Holder shall within one year set out a series of steps and changes to be implemented for continual system improvement, and reporting, within the next four years. Implementation and reporting shall consider obligations of the long term planning process including funding availability and asset ownership.
L4	**Spillages and Complaints**
70 GC	The Consent Holder must maintain and make available to the Council's Regulatory Manager on request, a record of complaints which lists all complaints received alleging adverse effects attributable to the activities. The record must include but not be limited to the following: (a) Name and address of the complainant (if given); (b) The nature and duration of the effect; (c) The date and time the effect was detected; (d) The location where the effect was detected; (e) The prevailing weather conditions when the effect was alleged to be occurring e.g. wind speed and direction; (f) The likely cause of the effect detected; and (g) Any measures taken to mitigate the alleged effect and to avoid its recurrence.
71 GC	The consent holder shall establish and maintain a 'complaints register' to record the date and time of any complaints received and from whom, the nature and location of the complaint, and any actions taken in response to that complaint. A copy of the complaints register shall be made available to the Council on request.
72 GC	The Consent Holder must immediately notify the Council's Regulatory Manager and chairs of Te Rongo o Tahu marae and Rākautātahi marae of, and keep a record of, any major spillage of material into the wastewater collection system that may adversely impact on the wastewater treatment plant, the land application system or the river discharge system that have the potential to or will result in a non-compliance with any of the conditions of the activities authorised by these Consents.
73 GC	If an event occurs on-site that may lead to effects including the contamination of groundwater that were not assessed in the application, the Consent Holder shall notify the Central Hawke's Bay District Council, or superseding registered drinking water supplier, and the Hawke's Bay Regional Council (Manager Compliance) of the event as soon as reasonably practicable after the event occurs *Advice Note: Such an event might include for example discharge of untreated sewage to the ground or to water. The Central Hawke's Bay District Council can be contacted on 06 587 8060. The Regional Council 24 hour Pollution Hotline should also be contacted on 0800 108 838.*
L3	**Accidental Discovery**
74 GC	In the event of an archaeological site, waahi tapu or koiwi being discovered or disturbed during the activities, the Consent Holder must immediately cease further work in the immediate area and inform Te Rongo o Tahu marae, Rākautātahi marae, Te Taiwhenua o Tamatea, the Council's Regulatory Manager, Heritage New Zealand and (in the event that human remains are found) the New Zealand Police. Further work at the immediate area must be suspended while Iwi carry out their procedures for the removal of Taonga. The Council's Regulatory Manager will advise the Consent Holder when work can resume. *Advice Note: In accordance with Section 14(1) of the Coroners Act 2006, in the event that human remains are found the NZ Police should be contacted immediately and all works in the immediate vicinity will cease until advice is given that works can recommence.*

L2	Review
75 GC	The Hawke's Bay Regional Council may annually during the month of May review the conditions of the consent in accordance with Sections 128, 129, 130, 131 and 132 of the Resource Management Act 1991 for the following purposes: a) To address any adverse effect on the receiving environment that can be reasonably attributed to the Activities which may arise from the exercise of the resource consent and which is appropriate to deal with at a later stage; b) To modify the Operational Management Plan as a result adverse effects on the environment as identified in (a) including, but not limited to: effects on groundwater and effects surface water. c) To modify the monitoring programme required by the resource consent or require additional monitoring if there is evidence that the current monitoring requirements of the resource consent are inappropriate or inadequate, including monitoring bores; d) To modify the reporting requirements of the resource consent if there is evidence that the current reporting requirements of the resource consent are inappropriate or inadequate; e) To allow for changes recommended by the System Review report; f) To address any new regional or national rules, standards, or regulations relating to freshwater and/or coastal water management; g) To identify new registered drinking water suppliers that may be directly impacted by the discharge to be notified under Condition 73 and any changes to the operational management plan to be adopted to avoid adverse effects on these receptors; h) Review of the median flow of Tukituki at Tapairu Road from State of the Environment reporting and update the location if a new one becomes available; and i) To address any new scientific understanding of groundwater movement downstream of the discharge and to address nutrient loading in a catchment that the discharge contributes when it is determined nutrient loading needs to be reduced as a result of any new national legislation, relevant regulations or regional rules.
76 GC	The Hawke's Bay Regional Council may, every five years, during the month of May review the conditions of the consent in accordance with Sections 128, 129, 130, 131 and 132 of the Resource Management Act 1991 for the following purposes: a) To review the appropriateness the nitrogen and phosphorus limits in Condition 8 having regard to usage by crops over the previous five years. b) To review the appropriateness nitrogen and phosphorus limits in Condition 8 having regard to new national and regional planning policy regulatory framework. c) changes of consent conditions and / or treatment system in respond to system review reports undertaken in accordance with Conditions 68 and 69.

Appendix 2 – Minutes of 1st Pre-Hearing Meeting (Thursday 18th November 2021

Minutes Pre-hearing Meeting – Takapau Wastewater Treatment Plant

Date: Thursday 18 November 2021

Time: 9.30am – 12.00pm

Location: Central Hawke's Bay District Council Chambers, 28/32 Ruataniwha Street, Waipawa

Attendees:

Name	**Organisation**
Bill Hale	**Submitter**
Reynold Ball	Hawke's Bay District Health Board (**Submitter**)
Darren de Klerk	Central Hawke's Bay District Council (**Applicant**)
Hamish Lowe	Lowe Environmental Impact (**on behalf of applicant**)
Sam Morris	Lowe Environmental Impact (**on behalf of applicant**)
Tania Diack	Hawke's Bay Regional Council
Sophia Edmead	Hawke's Bay Regional Council

Purpose

The purpose of the meeting was to discuss general issues associated with the application, and specific issues of concern to submitters. The meeting will be informal and without prejudice, the intention being to clarify and hopefully resolve the issues. The hope is that issues can be raised and any clarification sought provided.

Agenda

1. Welcome **(Sophia Edmead, HBRC)**
2. Introductions of applicant, submitters and Hawke's Bay Regional Council staff **(All)**
3. Explanation of purpose of meeting **(Sophia Edmead, HBRC)**
4. Brief introduction to application **(CHBDC)**
    - Central Hawke's Bay and their consultant (Lowe Environmental Impact) set out the project to date including community engagement and how the project had been developed to remove the discharge from the river as much as possible and to cater for the growth of Takapau.
5. Submitters' presentation of issues & questions to applicant and Council **(Submitters)**
    - Mr. Bill Hale outlined his concerns as per his written submission. Mr Hale highlighted the concern of the discharge proximity to the highway intersection to Takapau township, given the proximity to two of the three intersections to Takapau (via Nancy Street and Charlotte Street) and the proposed growth of Takapau. He has some concern about potential land uses at the state highway and the proposed discharge to land may limit this.

- Mr Hale also identified the desire to see the perimeter of the discharge area to be planted, particular on the boundary of the state highway to help ensure odour did not migrate from the site.
- Mr. Reynold Ball, on behalf of the DHB, identified a number of conditions that he considered needed further work to meet the sustainability goals of 'profit, people and planet'. Generally, Mr. Ball stated that the DHB are supportive of the granting of a 35 year consent, provided conditions of consent are reflective of ongoing and continued improvement within the term of consent.
- Mr. Ball would like to see rewording of conditions to reflect the removal of the discharge from the river completely over time. He agreed that there would be some requirement to discharge into the river during flood conditions but considered that this should not be the norm.
- Mr. Ball also raised some concern with the number of 'management plans' proposed in the current proposed conditions of consent (proposed conditions of consent version 2 – dated 20th August 2021). Mr Ball considered that these multiple plans should come under one umbrella management plan.
- Mr. Ball would like to see the odour management plan independently audited.
- Mr. Ball identified that the DHB were supportive of the Condition 50 GC (proposed conditions of consent version 2 – dated 20th August 2021) regarding public education and also a requirement for the applicant to provide a shelter belt around the property.

6. Applicant's response **(CHBDC)**
    - Mr Hamish Lowe, on behalf of Central Hawke's Bay, identified the issues raised by the submitters in a table visible by all. The applicant and submitters went through each point and discussed whether the concerns could be alleviated by existing consent conditions (proposed conditions of consent version 2 – dated 20th August 2021).
7. Summary & next steps
    - CHBDC / Lowe Environmental Impact to complete table of issues identified in prehearing meeting by COP 22/11/2021 (this may include further responses to submitted information and any updated conditions of consent).
    - CHBDC / Lowe Environmental Impact to provide word document of draft conditions of consent to HBRC by 22/11/2021
    - HBRC to provide notes and updated conditions of consent to submitters and applicant by 25/11/2021

- HBRC to schedule in second pre-hearing meeting early December. More information to be provided

8. Closing of pre-hearing meeting

Appendix 3 – Pre-Hearing Report for 2nd Pre-Hearing Meeting (Monday 13th December 2021)

PRE-HEARING MEETING REPORT OF CHAIR PRESIDING PURSUANT TO SECTION 99 OF THE RESOURCE MANAGEMENT ACT 1991 (RMA)

TAKAPAU WASTEWATER TREATMENT PLANT DISCHARGE RESOURCE CONSENT APPLICATION

Introduction

1. I was appointed by the Hawke's Bay Regional Council pursuant to s 99 of the RMA to chair a pre-hearing meeting regarding the application made by Central Hawke's Bay District Council (**CHBDC)** for the Takapau Wastewater Treatment Plant discharge (**WTP**).

2. This report sets out the key matters discussed by the parties attending the meeting, and the issues that were agreed, particularly with reference to proposed conditions of the various resource consents that have been sought under the application for the WTP discharge.

3. This was the second pre-hearing meeting regarding the application, the first having taken place on Thursday 18 November 2021.

4. I was provided with the minutes of that first pre-hearing meeting including a summary of the matters discussed, and a list of agreed actions and "key feedback" points.

5. I was also provided with relevant application material, including the Assessment of Environmental Effects (**AEE**), and a report prepared by Pattle Delamore Partners (**PDP**) comprising a review of the technical issues raised by the application.

6. Further, with a series of 'versions' of proposed consent conditions for the resource consents required, including as generated following the first pre-hearing meeting, updated in response to outputs of the PDP review, and with subsequent comments from CHBDC and the submitters.

7. An agenda for the meeting was pre-circulated along with the reference materials as just outlined.

Parties Attending

8. The meeting was held at the CHBDC Chambers on Monday 13 December 2021, commencing at 9.00 am and finishing at (approximately) 4.45 pm.

9. Present at the meeting were:

– Mr Bill Hale – Takapau resident (submitter)

– Mr Reynold Ball – Hawke's Bay District Health Board (submitter)

– Mr Darren de Klerk – CHBDC (applicant)

– Mr Hamish Lowe – Lowe Environmental Impact (Technical Advisor to CHBDC)

– Mr Sam Morris – Lowe Environmental Impact

– Ms Sophia Edmead – Hawke's Bay Regional Council (Senior Consents Planner)

– Ms Tania Diack – Hawke's Bay Regional Council (Team Leader Consents)

– Ms Hilary Lough (by audio visual link) – PDP.

The Application and activity proposed

10. In essence, the application is for a staged upgrade of the existing Takapau WTP in order to progressively reduce the river-based discharge of wastewater from the plant, and replace that with a (principally) land-based irrigation regime.

11. Land based wastewater irrigation would be integrated with and support continued agricultural use of the proposed (approximate) 40-hectare site adjacent to the existing WTP, which would (I understand) be leased or licenced by CHBDC for the purpose from the current landowners.

12. The current discharge point is to the Makaretu River via a wetland drain from the pond treatment system.

13. The WTP upgrade effecting this transfer of a river to land based discharge, would proceed across two principal stages, as follows:

- Stage 0 – current discharge continues for a period of up to three years.

- Stage 1 (within 3 years) – involving provision of at least 2,000 m^3 of storage and a minimum of 5 hectares of irrigation.

- Stage 2 (within 5 years) – involving a minimum additional 15 hectares of irrigation (to a total of 20 hectares), with additional storage capacity to a total of at least 18,000 m^3.

14. The concept is that any future discharge to the Makaretu River would be confined to periods of high river flow (principally, above half or median flow for Stage 1 and Stage 2 respectively).

15. The impetus behind this transition is one of strong iwi and broader community preference ,to avoid wastewater discharges to the river if at all possible.

Matters Discussed

16. Discussion at the meeting closely followed the proposed resource consent conditions (Version 4), with this version (incorporating the PDP advice outputs) distributed prior to the meeting, and comments in turn received on that version from CHBDC and the District Health Board (through Mr Reynolds).

17. Version 4 included 62 conditions which would be allocated across the necessary range of resource consents for the Takapau WTP, i.e. including a general consent, land discharge consent, land use consent, and air discharge consent etc.

18. The condition (of consent) topics which were the principal focus of discussion at the pre-hearing meeting comprised:

- Treated wastewater standards (proposed condition 3).[1]
- Filtration and ultraviolet (UV) treatment system requirements (proposed condition 4).
- Limits on total nutrient loading to the land discharge site (i.e. from both continued farming and nutrient inputs from the land-based wastewater discharge) (proposed condition 7).
- Potential effects from grazing animals on crops/land irrigated with wastewater (including as associated with human consumption, ingestion of pathogens) (proposed condition 10).
- Incentivising land-based irrigation in preference to river/surface water discharge, including on a “non-deficit” basis (proposed conditions 6, 11 and 12), including the specific discharge regime as linked to median flows and volumes able to be discharged at half, median and three times median flow rates for the Makaretu River (proposed condition 12).

[1] Number referencing being to version 4.

- Management of odour and site interface effects with the community (as raised by Mr Hale) (proposed condition 16, landscaping requirements etc).

- Monitoring and reporting requirements including for soil moisture and heavy metals (proposed conditions 34 and 54(b) in particular).

- On-farm nutrient management within the context of an over-allocated (as to nutrients) Tukituki River catchment (proposed condition 52 (Farm Environmental Management Plan)).

- Operational and Management Plan requirements (condition 47).

- Continuous improvement and system review reports (conditions 57(a), 57(b) and 62).

19. The dominant focus of discussion (relevant to many of the conditions listed above) was the need to "optimise" the overall environmental nutrient related performance of the combined farming and land-based wastewater irrigation regime, in the context of the strong community preference to transition from a river to land based discharge.

20. A "non-deficit" model is proposed, which involves a greater rate of irrigation than can be immediately absorbed within the topsoil, grass, crops, and other vegetation on the farm property, again- in preference to a river discharge.

21. A consequence of that approach is that nutrients within the wastewater will drain into ground water, and in turn potentially affect the Tukituki River catchment system (i.e. surface water), albeit indirectly.

22. Taken too far, excessive wastewater irrigation to land could be counterproductive, if too much fertiliser then still needs to be added to sustain farming activity, i.e., to replace wastewater-based nutrients lost to groundwater. Conversely, if land-based irrigation is managed well (or optimised), wastewater nutrients would supplement even replace fertiliser inputs.

23. The Regional Council's concern in this context relates to the cumulative impacts of activities within the Tukituki catchment, which is over-allocated relative to the 0.8 mg/l DIN limit set under Change 6 to the Regional Resource Management Plan (**RRMP**), and with (as I understand it) the existing farm operation currently operating in excess of the LUC natural capital leaching limits under the RRMP (also set under Change 6).

24. The tension between minimising the *physical* amount of river discharge (through non- deficit irrigation), and still ensuring a net improvement in overall *nutrient related impacts* on the catchment system, represents the essential challenge presented by the application.

25. The agreed outcomes in terms of revised conditions address that tension, in the attempt to arrive at the right overall balance between encouraging non-deficit irrigation (to minimise the rate and extent of river-based discharge) and ensuring that the overall environmental health of the ground and surface water system is improved.

26. Specific issues as to pathogen management including from consumption of food produced on the farm property, alongside odour and community interface concerns (site screening and the like), were also addressed during the course of the discussions.

Outcomes

27. The essential outcome of the pre-hearing meeting was that all proposed consent conditions were agreed as between the Regional Council reporting officers present at the pre-hearing meeting, the CHBDC representatives, and the submitters, on the following basis (*noting the reservations hereby recorded, including as to provision of further information*).

    (a) Condition 3 (Version 6 as appended to this report) agreed subject to provision of further information from CHBDC for Regional Council and PDP review, particularly in terms of the total suspended solids, Dissolved Inorganic Nitrogen (DIN), and *E.coli* limits, and as to the proposed management of pathogens (including helminths – refer proposed amendment to condition 47(b) (expressly referencing reduction of pathogens)).

    (b) Condition 4a amended to require certification and installation of a UV treatment system able to meet the wastewater treatment standards in condition 3, with the system to be operational prior to Stage 1 (i.e., within three years of the commencement of the resource consents), and thereafter operated continuously at times of discharge.

    (c) Nutrient loading limits (including for farm-based fertiliser application) in condition 7, to apply until reviewed under condition 63 (proposed new condition 63(a) in particular) following completion of the first system review report under condition 57(a) (5 years from consent commencement), which

would include an assessment of the application rate regime to optimise overall nitrogen and phosphorus contributions to ground and surface water. CHBDC is to provide additional information as to the justification for the limits included (under condition 7, Version 6) with reference to information regarding the existing farm system.

(d) The conditions' structure, being one of review following receipt of the first (5 yearly) system review report, would thereafter enable progressive optimisation of the overall operating regime, i.e. including as to non-deficit irrigation, incentivising land rather than surface water discharges, and farm environmental management performance, over time.

(e) In that regard, proposed condition 52 (requiring provision of a Farm Environmental Management Plan) has been amended to expressly reference nutrient budgeting, including for both farm and irrigation system inputs.

(f) Conditions 11 and 12 amended to further incentivise non-deficit irrigation by enabling breach of the land irrigation rate limits in condition 6, in the event that storage has reached 80% (rather than 90%) of the minimum volumes recorded in condition 13, with condition 12 in turn structured to progressively constrain discharge volumes relative to river flows, for Stage 1 and Stage 2.

(g) Condition 12 has been further amended to reference river flows for the Tukituki River (at Tapairu Road) as a determinant of median flows for the Makaretu River (there being no actual river flow resource available), with CHBDC to provide justification for the correlation between that flow measurement site, and the Makaretu River at the discharge point.

(h) The Regional Council will identify the State of the Environment report from which specific flow rates (half median, median, three times median etc) could be set under condition 12, and a new review condition is added under condition 62 (62(f)) along with system review reporting (proposed condition 57 (a)(e)), to ensure that the median flow measurement point (Tapairu Road Tukituki gauging site) remains appropriate to predict median flows for the Makaretu River.

(i) New condition 19(a) has been added requiring the consent holder to plant and maintain a vegetation screen along State Highway 2, to be double fenced to ensure survival of the plants, with irrigation not to commence until that planting has completed. CHBDC has also agreed to update Mr Hale (who raised this issue) on discussions with iwi as to extending riparian river corridor planting, and following further discussions with the landowners as to potential planting along the western site boundary.

(j) Condition 34 has been amended to delete reference to soil moisture and heavy metals, with soil moisture addressed through continuous monitoring under condition 34(a), and heavy metals to be monitored on a five yearly basis within proposed new condition 34(c). A proposed condition requiring the monthly reporting of soil moisture data (condition 54(b) of Version 4) has been deleted, with the telemetered soil moisture data under proposed condition 34(a) instead needing to be provided to the Council upon request.

(k) Conditions 40 and 42 would be amended as to the number of years (two versus three) for which an ecological assessment of the Makaretu River is required, subject to CHBDC confirming to the Regional Council that previous sampling is equivalent to the requirements of these two conditions.

(l) Condition 37 to have a 400-metre downstream discharge location (rather than 200 metres as proposed by PDP), to align with historic records and sampling of the discharge.

(m) Condition 47 amended as addressed above (reference to reduction of pathogens in condition 47(b)) and with condition 47(q) to now also refer to mitigation measures for odour associated with wastewater treatment plant and maintenance activities.

(n) Condition 57 (annual reporting) to be amended to include a new requirement relative to soil moisture monitoring trends, including as to field capacity and any defined irrigation trigger points (condition 57 (f)).

(o) An additional review purpose has also been added to proposed condition 62, regarding new registered drinking water suppliers which might be directly impacted.

(p) New proposed condition 63 (as also discussed earlier) includes reviews following receipt of the five yearly system review reports, including as would enable changes to consent conditions and the treatment system, in response to those system review reports.

28. The list of agreed outcomes set out above is intended to be relatively exhaustive, however in the event of any conflict between that summary and the conditions amended in Version 6 appended to this report, the latter should prevail.

Result

29. In the result, all substantive issues and related conditions were essentially agreed by all parties.

30. Mr Reynold Ball confirmed that he is unlikely to wish to be heard but would need to obtain confirmation from the District Health Board itself.

31. The applicant would not need to be heard, assuming that the conditions appended to the s 42A report for the application are consistent with the outcomes recorded herein. In that regard, CHBDC wished me to record that it would be “disappointed” if the s 42A report were to propose additional or different conditions to those agreed at the pre-hearing meeting.

32. Mr Hale does not wish to be heard (as signalled previously).

…….
Martin Williams
Pre-Hearing Meeting Chair

Dated: 22 December 2021

Takapau WWTP Conditions – 14 December 2021 – Version 6

CONDITIONS RELATING TO CENTRAL HAWKE'S BAY DISTRICT COUNCIL WASTEWATER DISCHARGE CONSENTS

CONSENT HOLDER: CENTRAL HAWKE'S BAY DISTRICT COUNCIL

TAKAPAU WASTEWATER TREATMENT PLANT DISCHARGES

Definitions:

The following definitions apply across all resource consents:

Terminology Used	Definition
Active Storage	Means storage of treated wastewater ready for land discharge that has left the Takapau Wastewater Treatment Plant.
Activities	Means the Activities authorised by the Resource Consents
Consent holder	Means Central Hawke's Bay District Council
Council	Means the Regulatory Compliance Manager of the Hawke's Bay Regional Council.
HRLP	Means High Rate Land Passage where the existing discharge from the Takapau Wastewater Treatment Plant to the Makaretu River occurs.
Land application	The process of application of wastewater to land, and in this case using irrigation.
Properties	Means the two land parcels to receive wastewater irrigation. These are 45 Burnside Road (Part Lot 1 DP 15623 – 23.95 ha & 4292 State Highway 2 Lot 1 DP 16445 – 18.9 ha).
Treated Wastewater	Means treated wastewater derived from the Consent Holder's Takapau WWTP.
WWTP	Means the Takapau wastewater treatment plant including all current and future treatment processes and storage facilities within the CHBDC land parcel located at 53 Burnside Road legally described as Lot 1 DP 17032, Central Hawke's Bay District.

With each condition number, there is a reference. This reference refers to:

GC: General Conditions; LD: Land Discharge; LU: Land Use: AD: Air Discharge; ID: Indirect Discharge.

Number	Wording	Comment / Notes
L1	**GENERAL CONDITIONS**	
1 GC	These general conditions apply to Discharge consents X, Y and Z, and Land Use consent A, collectively called 'the Consents'.	
L2	**Overarching Principles**	
2 GC	Except as otherwise required by any other condition of the Resource Consents, the Activities must be carried out in general accordance with the following information provided by the applicant (collectively referred to as 'the Application') where the most recent information takes priority over older information in the event of any conflicts: (a) Takapau Wastewater Discharge – Resource Consent Application and AEE, dated [X] 2021, including Appendices A-[?]; and (b) ? (c) ? (d) Agreed outcomes from engagement with submitters as detailed in i. ? ii. ? iii. ? *Advice Note: If any conflict arises between the conditions of the consent and the application, the conditions of this consent will prevail.*	

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Takapau WWTP Conditions – 14 December 2021 – Version 6

L2	**Operational Matters**	
L3	**Discharge Quality Parameters**	
3 GC	The Consent Holder must ensure that the treated wastewater meets the following standards prior to discharge to the irrigation and High Rate Land Passage (HRLP): (a) The concentration of Carbonaceous five-day Biochemical Oxygen Demand (BOD_5) must not exceed 30 g/m^3 in more than 8 out of 12 consecutive monthly samples, or 60 g/m^3 in more than 2 out of 12 consecutive monthly samples; (b) The concentration of Total Suspended Solids (TSS) must not exceed 90 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 180 g/m^3 in more than 2 out of 12 consecutive monthly samples; (c) The concentration of Ammoniacal Nitrogen (NH_4-N) must not exceed 12 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 25 g/m^3 in more than 2 out of 12 consecutive monthly samples; (d) The concentration of Dissolved Inorganic Nitrogen (DIN) must not exceed XXX for more than 8 out of 12 consecutive monthly samples, or XX in more than 2 out of 12 consecutive monthly samples; (e) The concentration of Dissolved Reactive Phosphorus (DRP) must not exceed 4 g/m^3 for more than 8 out of 12 consecutive monthly samples, or 8 g/m^3 in more than 2 out of 12 consecutive monthly samples; and (f) In accordance with Condition 4, the concentration of Escherichia coli (*E. coli*) must not exceed the following: a. Stage 0: X cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or X cfu/100 mL in more than 2 out of 12 consecutive monthly samples. b. Stage 1 onwards: X cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or X cfu/100 mL in more than 2 out of 12 consecutive monthly samples. *Advice Note: Compliance will be demonstrated based on the samples required by Condition 33 [monitoring section]. The exceedance frequency allowed for the Treated Wastewater quality values identified above are based on monthly sampling over an annual 12-month monitoring period of 1 July to 30 June each year in accordance with the New Zealand Municipal Wastewater Monitoring Guidelines (NZWERF, Sept 2002) Table 13.2. If the frequency of sampling is more than monthly, the allowed numbers of annual exceedances will need to be amended to remain in line with the New Zealand Municipal Wastewater Monitoring Guidelines (NZWERF, Sept 2002) Table 13.2.*	Note: numbers highlighted need confirmation. Values for a-d are approximate to median or average and 95th percentile values as used to assess effects to surface water.
L3	**Discharge Volumes and Timing**	
4 GC	The timing of changes to the treatment and discharge regime shall be as follows: (a) Stage 0: To have ceased within 3 years of commencement of these consents; (b) Stage 1: To be operational within 3 years of commencement of these consents; and (c) Stage 2: To be operational within 5 years of commencement of these consents and then for the duration of this consent.	
	Filtration and Ultraviolet Treatment System	
4a	Within six months of the commencement date of the resource consents, the consent holder shall provide the Council with a detailed UV treatment and filtration design report prepared by a suitably qualified and experienced independent expert. The report shall demonstrate how the UV treatment system ensure the wastewater complies with condition 3. If the Council certifies the Report, the Consent Holder shall install and operate the filtration and UV disinfection treatment system in accordance with the certified design prior to Stage 1 of the consent (Condition X) if receiving confirmation of certification. Thereafter operate continuously at the time of discharge.	

Commented [SE1]: As per final compliance report of previous consent (AUTH-109612-03), there were 11 exceedances of the 100mg/l TSS limit recorded during the monitoring period.

Additional filtration is proposed (as per application) as per Beca letter dated 24 June 2021. The previous consent (AUTH-109612-03) limited to 100 mg/l (g/m3), where has this limit of 180g/m3 come from?

Should this not be lower given the proposed additional filtration?

Commented [SE2R1]: Outcome of second pre-hearing meeting:

LEI to provide justification on these limits and why total nitrogen (all limits as well as TSS and *E. coli*)

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Takapau WWTP Conditions – 14 December 2021 – Version 6

L4	**Land**	
5 LD	The discharge of treated wastewater to the land via irrigation shall meet the following criteria: a) Stage 0: 0 ha of irrigation; b) Stage 1: Not less than 5 ha of irrigation; and c) Stage 2: Not less than 20 ha of irrigation.	
6 LD	The Consent Holder must ensure the application rate of treated wastewater onto land or into land does not exceed: (a) 2 mm above field capacity; (b) 5 mm/h; and (c) 20 mm in any one application.	
7 LD + LU	The consent holder shall ensure that the nutrient loading resulting from the discharge of wastewater onto and into land of the **Properties** does not exceed the following criteria on an annual yearly average. Where the discharge of wastewater does not exceed the cap identified below, the consent holder may apply a fertiliser material to meet the nutrient requirement of the specific crop. Where an additional fertiliser material is applied to land, record must be kept in accordance with condition XXX. (a) Max N Load 200 kg N/ha/year (b) Max P Load 65 kg P/ha/year The above limits will apply until reviewed under Condition 63. Advice note: the above limits are not the overall limits for the whole farm or farming enterprise[1], only the Properties as defined in the glossary above.	
8 LD + LU	Meeting the requirements of Condition 7 shall be determined by calculating the nutrient loading to each block within the properties receiving wastewater. The nutrient loading will be based on the results of monitoring required in accordance with Condition 33, 54, 54(a) and 54(b).	
9 LD + AD	The Consent Holder must ensure that treated wastewater is not discharged to land closer than: (a) 20 m from any watercourse, whether flowing continuously or intermittently, including any open drain and wetland; (b) 20 m from any property boundary where there are no buildings; (c) 50 m from any bores; or (d) 150 m from any dwelling house, milking shed, public place, amenity area or education facility or other building on any property bordering the land treatment area. (e) 50m from rare habitats, threatened habitats or at risk habitats (as identified by HBRC at any time during the term of the resource consent) (f) 50 m separation distance from any sites of cultural significance known to exist at the time of approval for this resource consent, or any sites of cultural significance found to exist at any time following the grant of this resource consent	
10 LD	The Consent Holder must not discharge treated wastewater to land of the Properties: (a) Within 48 hours after the application of fertiliser; (b) Within 24 hours after any harvesting activity; or (c) When 50 mm or more rainfall has occurred in the previous 24 hour period as recorded at the Waipukurau Climate Station [No.31620].	

Commented [SE3]: HBRC to review this

LEI to confirm where these have come from. Including justification for these limits given the previous farming system

Commented [SE4]: Suggest removing this and having as a reason for review in condition 61 – to discuss with LEI.

[1] Farming Enterprise Means an aggregation of parcels of land within the same Surface Water Allocation Zones identified in Schedule XVI, held in single or multiple ownership (whether or not held in common ownership) that constitutes a single farming operating unit

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Takapau WWTP Conditions – 14 December 2021 – Version 6

10(a)	The consent holder must not graze animals or harvest any crops on land that has been irrigated with wastewater for at least 48 hours, or while the pasture is wet with irrigated wastewater, whichever is longer. Advice note: The consent holder should ensure they are aware of requirements of other regulatory bodies (for example the Ministry of Primary Industries, Ministry of Health) regarding the use of land irrigated with wastewater for primary produce.	
11 LD	In the event that storage has reached 80 % of the relevant volumes specified by Condition 13 of working capacity and river flow conditions as set out in Condition 12 do not permit discharge, irrigation can occur at a rate that exceeds those in Condition 6 [discharge rate condition] but no more than 50 mm in any one application. The consent holder shall notify the Council within 3 days of exceeding the discharge rates specified by Condition 6 with evidence that storage capacity had reached 80% and that river flows were such that wastewater could not be discharged to the river in accordance with Condition 12. *Advice note: Storage capacity is measured on a volume basis and excludes freeboard capacity.*	
L4	**HRLP**	
12 ID	The discharge of treated wastewater to the HRLP which drains to the Makaretu River shall only occur when the field capacity in accordance with Condition 6 has been reached and storage capacity has exceeded 80%. Any discharge of treated wastewater to the HRLP shall meet the following criteria: a) Stage 0: b) Stage 0: i. The flow rate averaged over the preceding 365 days of the discharge shall not exceed 216 m^3/d. c) Stage 1: i. When the river flow is below 4,735 L/s (half median) there shall be no discharge to the Makaretu River; ii. When the river flow is greater than 4,735 L/s (half median) and less than 9,470 L/s (median), the discharge shall not exceed 200 m^3/d; iii. When the river flow is greater than 9,470 L/s (median) and less than 28,410 L/s (3x median), the discharge shall not exceed 750 m^3/d; and iv. When the river flow is greater than 28,410 (3x median), the discharge shall not exceed 1,000 m^3/day. d) Stage 2: i. When the river flow is below 9,470 L/s (median) there shall be no discharge to the Makaretu River; ii. When the river flow is greater than 9,470 L/s (median) and less than 28,410 L/s (3x median), the discharge shall not exceed 800 m^3/d; and iii. When the river flow is greater than 28,410 (3x median), the discharge shall not exceed 1,100 m^3/day. iv. *Advice Note: This reference has been sourced from SOE report* *Advice note: River flow shall be measured for the Tukituki River at Tapairu Road at 9 am and the ability to discharge shall span a period of 24 hr to 9 am the following morning.*	There is a need to discuss with HBRC consenting staff the criteria to apply when a discharge is needed and the river is in flood flow.
	Storage	
13 GC	The Consent Holder shall provide the following volume of active storage: a) Stage 0: 0 m^3; b) Stage 1: Use of the existing treatment pond to provide not less than 2,000 m^3; and c) Stage 2: Construction of a new pond with a volume not less than 18,000 m^3.	

Commented [SE5]: HBRC report SOE river flows and confirm the median flow.

CHBDC to comment on whether Tukituki at Taipiru has good correlation with Makaretu

Commented [SE6]: These are proposed to be smaller than Stage 2 due to population growth.

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	Advice note: Stage 1 provides for the use of the existing pond for storage until a new pond is built as required by Stage 2.	
L3	**Farm Management**	
14 LU	The Consent Holder shall prioritise using wastewater over the use ground or surface water to provide for the growth of pasture and crops. The Consent Holder shall ensure that where groundwater or surface water is used to supplement the use of wastewater on site, records shall be made demonstrating that wastewater was not available for use. *Advice note: Fertiliser can also be used to supplement nutrient in wastewater up to the limit as noted in Condition 7 [N and P loading limit condition].* *Advice note: clean water is available from a number of sources, including groundwater and surface water. The approval process for obtaining this water is outside this consent process.*	
15 LU	The Consent Holder shall exclude all stock (other than sheep) from the beds and margins of any lake, wetland and flowing river (whether intermittent or permanent) within 3 months of the grant of this consent. Notwithstanding the above, the consent holder can graze permanently fenced riparian margins for weed control purposes providing: a) The consent holder shall keep a record of how many the date and period in time the riparian margins are grazed; b) The total grazing period in any year does not exceed 7 days; and c) The fenced riparian margin shall be grazed no more than twice in any year during the period 1 November to 30 April.	
51 LU	The Consent Holder shall ensure that: a) Records specified within Schedule XXI of the Tukituki Plan Change 6 are retained for each year (1st June to 31st May) enabling a nutrient budget to be prepared; or Copies of Nutrient Budget input and output files have been prepared in accordance with an industry programme approved by HBRC.	
52 LU	Within 3 months of the commencement of the consent, the Consent Holder shall prepare a Farm Environmental Management Plan in accordance with Schedule XXII of the Tukituki Plan Change 6 (PC6) for properties receiving wastewater. The Farm Environmental Management Plan shall include: a) A Nutrient Budget incorporating the measurement or modelling of whole of property nutrient losses (kg/ha/year) including farm and irrigation system inputs calculated using the annual records specified in Schedule XXI and the Overseer Nutrient Budget model (or an alternative model approved by Hawke's Bay Regional Council); b) A Phosphorus Management Plan including details specified in Schedule XXII; c) Alongside all other information relevant to the farm property required for a Farm Environmental Management Plan; and d) Identifies ways of actively reducing the amount of synthetic fertiliser applied to the irrigated area Advice note: One FEMP should be provided for the whole farm property or farming enterprise[2] that the properties wastewater is irrigated to consist of.	
LU52(a)	The consent holder shall work with the farm manager and the FEMP provider to review the FEMP yearly to understand the management processes being carried out on the farm including the application of synthetic fertiliser and to actively minimise the use of synthetic fertiliser across the farm area. This FEMP review shall be provided to the manager compliance yearly.	
L3	**Odour and Aerosols**	

[2] Farming Enterprise Means an aggregation of parcels of land within the same Surface Water Allocation Zones identified in Schedule XVI, held in single or multiple ownership (whether or not held in common ownership) that constitutes a single farming operating unit

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16 AD	The discharges and activities authorised by this consent shall not result in odour (or spray drift) that is offensive or objectional to the extent that it causes an adverse effect on the environment at or beyond the boundary of the site. *Advice Note: An odour or spray drift will only be considered offensive or objectionable after a Council enforcement officer has considered the Frequency, Intensity Duration, Offensive and Location of the odour or spray drift (i.e. the FIDOL Factors). The property boundary is defined as the edge of any of the properties identified in Condition 2 adjacent to property that is not identified in Condition 2.*	
17 AD	Prior to the discharge of **treated wastewater** to land the Consent Holder must install a weather station on the site to be used for land application of treated wastewater and the weather station shall be maintained at all times to provide data for managing the land application system. At a minimum this must include: a) Wind speed and direction at 6 m above the ground ; and b) Rainfall at ground level; and c) Air temperature at 1.5 m and 6 m above ground; and d) Relative humidity	
17A AD	The meteorological monitoring collected under Condition 17 AD shall be: a) Collected in general accordance with the Good Practice Guide for Air Quality Monitoring and Data Management, Ministry for the Environment (2009), or superseding document b) Continuous for the duration of the consent comprising 1 minute data, collected and averaged to 10 minutes and 1 hour time periods; c) At a point that the representative of local weather conditions across the site d) The wind speed and direction instrumentation shall be able to operate reliably down to a maximum wind speed threshold of 0.1m/s e) The consent holder shall provide the Hawke's Bay Regional Council information collected from the weather station required by Condition 17 AD as soon as possible upon request.	
18 AD	The Consent Holder must operate the system such that irrigation of treated wastewater automatically ceases when: • the 10 minute average wind speed at the site exceeds 10 m/s; or • where the *E.coli* concentration in treated wastewater for the most recent sample is greater than 10,000 cfu/100 mL and the 10 minute average wind speed at the site exceeds 4 m/s from any wind direction Advice note: The purpose of this condition is to avoid adverse health effects where there is the potential for winds to cause spray drift that may contain pathogens to be carried beyond the property boundary upon which the activity is taking place. This condition applies only to the discharge of wastewater – clean water irrigation is not subject to the same shut down requirements.	
	Signage	
19 GC	The Consent Holder must, before commencing irrigation activity, erect and maintain signs on SH2 and Burnside Road fences, and the true right bank both upstream and downstream of the Makaretu River Bridge. The purpose of the signage will be to inform the public of the activity being carried out on the site and to identify potential risk and hazards that may result from the activity. The precise wording and location of the signage must be certified by the Council's Regulatory Manager. The wording of the signage shall be large enough to be read by a person with normal eyesight at 20 m and shall advise of the presence of the treated wastewater discharge in the area.	
	Planting	

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19(a) AD	The Consent Holder shall plant and maintain a vegetation screen along SH2. The planting shall be double fenced to ensure survival of the plants. Irrigation shall not commence until such planting has been completed.	Mr Hale suggestion, DHB happy
	Representative	
20 GC	The consent holder shall nominate a person who is responsible for the maintenance of the wastewater treatment system and the return of information (as required by conditions of this consent). The consent holder shall advise the Council (Manager Compliance) who this person is within one month of the commencement date of this consent and within ten working days of any change occurring.	
	Sampling Port	
21 GC	From the commencement of these Consents, the Consent Holder must install and maintain a sampling port in the pipeline to the land treatment system and the HRLP system.	
	Metering	
22 GC	From the commencement of these Consents, the Consent Holder must install and maintain flow meters to measure and record the wastewater volumes discharged: a) into and out of the Takapau WWTP; b) to the HRLP; c) into and out of the storage pond; and d) to the land treatment area. The measuring device and recording system shall be maintained to continually measure and record the rate and volume of effluent discharged from the oxidation pond. Measuring and recording shall be at intervals not exceeding 30 minutes and to an accuracy of +/- 5%.	Changed for consistency with other consents.
23 GC	Within three months following the installation of the flow meter, and every five years thereafter for the duration of Consents, the Consent Holder must have the flow meters, required by Condition 22, verified in accordance with the manufacturer's specifications. The Consent Holder must provide to the Council's Regulatory Manager, an in-situ flow meter verification certificate confirming the validity of the meters within one month of the verification being completed.	
24 GC	Within three months of the commencement of these Consents, the Consent Holder must provide the Council's Regulatory Manager with near real-time treated wastewater discharge information recorded and collected from the flow meters referred to in Condition 22. This information must be recorded at 15minute intervals and be provided automatically on a daily basis in a format compatible with the Council's database.	
	Infrastructure Inspection	
25 GC	The Consent Holder must ensure that the physical infrastructure of the pond system is inspected every month. Any damage to pond embankments, or signs of pond seepage must be identified, noted, and fixed as soon as practicably possible.	
26 LD	The Consent Holder must ensure that the physical infrastructure of the land treatment system and the land treatment area are inspected every week when operational, and that relevant parts of the systems are also inspected whenever any alarms associated with the systems are activated.	
27 ID	The Consent Holder must ensure that the physical infrastructure of the HRLP system is inspected every month and that relevant parts of the systems are also inspected whenever any alarms associated with the systems are activated.	
28 GC	If any blockages and/or breaks are identified in an inspection under Condition 25 and 26 or otherwise, the system affected must cease operation until the blockage and/or break is remedied, and the Consent Holder must notify Council's Regulatory Manager within 48 hours of identifying the blockage and/or break.	

Commented [SE7]: CHBDC to report on update with iwi on Mr Hale.
Discussion ongoing about planting on western boundary.

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29 GC	Records of the inspections made in accordance with Condition 25, 26 and 27, and any resulting system maintenance, must be kept and made available to the Council on request and a copy be provided within the Annual Report required under Condition 57.	

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L2	**Monitoring**	
L3	**General**	
30 GC	The Consent Holder must ensure that all sampling equipment, including meters and field measurement devices, are maintained in good working order by suitably qualified persons in accordance with the manufacturer's instructions and industry best practice guidelines. Records of calibration shall be kept and made available to the Council upon request.	
31 GC	In respect of monitoring required by the Consents, the following apply: (a) All monitoring and sampling techniques employed in respect of the conditions of the Resource Consents must be carried out by suitably experienced and qualified persons; (b) All analytical testing other than on-site measurements, undertaken in connection with these Resource Consents must be performed by a laboratory that is IANZ accredited for the analytical tests or any other method approved in advance in writing by the Council Manager; (c) All water sample analyses must be undertaken in accordance with the methods detailed in the "Standard Methods For The Examination Of Water And Waste Water, 2017" 23rd edition by A.W.W.A., A.P.H.A. and W.E.F., or any other method approved in advance in writing by the Council Manager; and (d) If any monitoring sites are identified as unsuitable, alternative monitoring sites must be identified and developed within a reasonable time after consultation with the Council Manager.	
32 GC	Results of monitoring collected in accordance with Conditions 33 to 42 below must be transferred within 10 working days of their receipt to the Council in a format compatible with Council systems.	
L3	**Wastewater**	
33 GC	From the commencement of these Consents, the Consent Holder must take samples of treated wastewater from the sampling port(s) (installed in accordance with Condition 21), once per month in any month that a discharge to the land treatment area or the HRLP system occurs, and while the discharge is occurring. The sample must be analysed for: (a) pH (b) $ScBOD_5$; (c) Total Suspended Solids; (d) Total Nitrogen; (e) Nitrate Nitrogen (NO_3-N); (f) Ammoniacal-Nitrogen (NH_4-N); (g) Nitrite Nitrogen (NO_2-N); (h) Total Phosphorus; (i) Dissolved Reactive Phosphorus (DRP); (j) Sodium (Na); (k) Potassium (K); (l) Magnesium (Mg); (m) Calcium (Ca); and (n) Escherichia coli (*E. coli*).	
34 GC	From the commencement of these Consents, the Consent Holder must take a sample of treated wastewater from the sampling port(s) (installed in accordance with Condition 21), once per year in any month that a discharge to the land treatment area or the HRLP system occurs, and while the discharge is occurring. The sample must be analysed for helminth eggs.	
L3	**Soils**	

Commented [SE8]: I have added this as was discussed in the meeting (13/12/2021) but not brought forward. Discussion was to remove the requirement of a limit in Condition 3 but have it as a monitoring requirement.

Happy to discuss.

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34 LD	The Consent Holder must take annual composite soil samples from areas that align with blocks detailed in nutrient budget reporting and have received treated wastewater within the previous 12 month period (starting 1 October and ending 30 September) for the duration of this Discharge Consent. A minimum of ten 75 mm depth composite samples must be obtained from each paddock, and must be analysed for the following: (a) pH; (b) Exchangeable Sodium (Na); (c) Exchangeable Sodium percentage (Na); (d) Exchangeable Potassium (K); (e) Exchangeable Magnesium (Mg); (f) Exchangeable Calcium (Ca); (g) Phosphorus (Olsen); (h) Total Phosphorus (i) Sulphate-S; (j) Total Nitrogen (TN); and (k) Cation Exchange Capacity.	
34(c) LD	The Consent Holder must take composite soil samples every five years from areas that align with blocks detailed in nutrient budget reporting and have received treated wastewater within the previous five year period (starting 1 October and ending 30 September) for the duration of this Discharge Consent. A minimum of ten 75 mm depth composite samples must be obtained from each paddock, and must be analysed for the following: (a) Total Arsenic (b) Total Cadmium (c) Total Chromium (d) Total Copper (e) Total Lead (f) Total Mercury (g) Total Nickel (h) Total Zinc	
34(a) LD	The consent holder shall install and maintain telemetered soil moisture measuring equipment (Aquaflex or similar) in each block detailed in the nutrient budget reporting. The location and installation details of any relocated or new soil moisture measuring equipment to be installed shall be agreed upon with the Council (Manager Compliance), prior to its installation. ~~This should be made readily available to the Council (Manager Compliance) on request.~~ Records of the soil moisture in each block detailed in nutrient budget the nutrient budget reporting shall be kept and provided to the Council (Manager Compliance) upon request.	
34(b) LD	The soil moisture monitoring equipment shall be calibrated in accordance with the manufacturers/installer's recommendations, and regularly maintained to ensure that it operates correctly. Records of both calibration and maintenance shall be kept and provided to the Council (Manager Compliance) upon request.	
L3	**Groundwater**	
35 GC	The Consent Holder shall monitor groundwater quality quarterly in the locations identified on Plan x and in accordance with the MfE Groundwater sampling protocols (2006) or any subsequent updated document.	

Commented [SE9]: Changed wording for consistency with condition 34(b) below

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36 GC	The Consent Holder must measure and record the static water level of all bores identified in Condition 35 prior to purging and sampling. Samples collected from the bores and shall be analysed for the following parameters: (a) Temperature (field measurement); (b) pH (field measurement); (c) Electrical Conductivity (EC); (d) Chloride (Cl); (e) Nitrate-Nitrogen (NO_3); (f) Ammoniacal-Nitrogen (NH_4N); (g) Nitrite-Nitrogen (NO_2); (h) Dissolved Reactive Phosphorus (DRP); (i) *Escherichia coli* (*E. coli*); and (j) Sodium (Na).	
L3	**Surface Water Chemistry**	
37 ID	The Consent Holder shall monitor surface water quality in the months of November, March and July in the locations identified on Plan x. These include sites located: a) 50 m upstream of the discharge location; b) 50 m downstream of the discharge location; and c) 400 m downstream of the discharge location. *Advice note: The exact location of the monitoring sites shall be confirmed in consultation with the Council's Regulatory Manager. Should the monitoring locations become unsuitable or inaccessible for sampling due to reasons beyond the consent holder's control during the term of the consent, the consent holder shall identify new monitoring locations, in consultation with the Council's Regulatory Manager.*	
38 ID	Three years after the commencement of this consent, the Consent Holder may prepare a review report that seeks to reduce or cease the monitoring required by Condition 37 by way of a variation. This report shall be prepared by a suitably qualified and experienced person and be submitted to Council's Regulatory Manager. The justification shall detail and demonstrate the appropriateness of future monitoring, if any, and take into account the impacts, or lack of, as a result of the Stages implemented in accordance with Condition 4. No change in monitoring shall occur until such time as the Council's Regulatory Manager has agreed to a variation to this consent.	
39 ID	The Consent Holder must monitor the following parameters at the sites identified in Condition 37: (a) pH (field measurement); (b) Temperature (field measurement); (c) Dissolved oxygen (field measurement); (d) Total Suspended Solids (TSS); (e) scBOD5 (Dissolved carbonaceous biochemical oxygen demand being material passed through a GF/C filter); (f) Total Nitrogen (TN); (g) Nitrate Nitrogen (NO_3); (h) Ammoniacal Nitrogen (NH_4N; (i) Nitrite-Nitrogen (NO_2); (j) Dissolved Reactive Phosphorus (DRP); (k) Total Phosphorus (TP); and (l) *Escherichia coli* (*E. coli*).	
L3	**Macroinvertebrate Sampling**	

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40 ID	The Consent Holder must have a suitably qualified and experienced freshwater ecologist undertake macroinvertebrate sampling in the Makaretu River between January and April for the first two years following commencement of this consent and thereafter every five years. The macroinvertebrate assessment must be undertaken following a period of at least three weeks without a flood event and during a period of stable flow. The timing of the monitoring must be confirmed by Council's Regulatory Manager prior to the commencement of the monitoring. The locations of the assessments and sampling shall be a collection of at least 5 replicate 0.1 m^2 surber samples from at least three upstream and three downstream sampling sites, pooled to give multiple composite upstream and downstream samples. *Advice Note: A flood event is considered to be when the Makaretu River is at and above 28,410 L/s (3x median flow) as measured for the Tukituki River at Tapairu Road.*	The frequency of monitoring is proposed to reduce to reflect the reduced discharge potentially reaching surface water.
41 ID	The Consent Holder must ensure that the macroinvertebrate sampling referred to in Condition 40 above follows Protocols C3 (Hard-bottomed quantitative), P3 (full count with subsampling option) and QC3 (Quality control for full count with subsampling option) from the Ministry for the Environment's "protocols for sampling macroinvertebrates in wade-able streams" (Stark et al. 2001). This shall involve: (a) Collection of five replicate 0.1 m^2 surber samples at random within a 20 m section of riffle habitat at each sampling site; (b) Full count of the macroinvertebrate taxa within each replicate sample to the taxonomic resolution level specified for use of the Macroinvertebrate Community Index (MCI); and (c) Enumeration of the results as taxa richness, MCI, QMCI, % EPT taxa and % EPT individuals.	
L3	**Chlorophyll a Monitoring**	
42 ID	Consent Holder shall have an appropriately experienced and qualified freshwater ecologist undertake assessments in the Makaretu River once between January and April for the first ~~two~~ three years following commencement of this consent and thereafter every five years of the percentage cover, biomass, chlorophyll *a*, AFDW and community composition of periphyton, filamentous algae and cyanobacterial mats in run habitat, as close as possible to the sites selected for macroinvertebrate sampling above. The periphyton and algae assessment is to include: (a) A visual assessment of the percentage cover of both filamentous algae and algal mats (to the nearest 5%) at 5 points across four transects encompassing run habitat and extending across the width of the river at each sampling site. The visual monitoring methods shall follow the protocols outlined in Appendix 2 of 'A periphyton monitoring plan for the Manawatu-Wanganui Region' (Kilroy et al 2008). Reported estimates shall include: i. Percentage cover of visible stream or river bed by bacterial and/or fungal growths (sewage fungus) visible to the naked eye; ii. Percentage cover of visible stream or river bed by filamentous algae more than 2 cm long; iii. Percentage cover of visible stream or river bed by diatoms or cyanobacteria mats more than 0.3 cm thick; iv. Percentage cover of visible stream or river bed by diatoms less than 0.3 cm thick; and v. Percentage cover of visible stream or river bed that is clean. The collection of a periphyton sample at the same established monitoring sites and transects, using method QM-1b from the Stream Periphyton Monitoring Manual (Biggs & Kilroy 2000). Analysis of periphyton samples shall follow the Biggs and Kilroy (2000) guidelines for chlorophyll *a* analysis.	The frequency of monitoring is proposed to reduce to reflect the reduced discharge potentially reaching surface water.
L3	**Cultural Health Index Monitoring Protocols**	

Commented [SE10]: CHBDC to send HBRC/PDP the results of the existing sampling that has occurred. PDP happy that if the historic sampling is the same, sampling for the first two years, rather than three years is suitable.

Commented [SE11]: As above re sampling frequency

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43 GC	Within two years of the commencement of this consent, the Consent Holder must invite X (body representing Māori interests) to undertake Cultural Health Monitoring according to their respective tikanga. If the engagement is accepted, the Consent Holder must commission X (body representing Māori interests) or nominees (as advised) to undertake Cultural Health Monitoring in compliance with the Cultural Health Monitoring protocol prepared in accordance with Condition 44.	
44 GC	If the engagement is accepted to undertake Mauri Cultural Health Monitoring as set out in Condition 43, the Consent Holder must commission X to prepare a Cultural Health Monitoring protocol that as a minimum, must: (a) Describe the relationship of tangata whenua to the discharge area and the sites of interest in or near the locations to which these Permits apply; (b) Describe the tikanga relevant to the proposed cultural monitoring (including kaitiakitanga, mauri of awa, whenua, tangata, whanaungatanga and te ha tawhirimatea), the activities, and the site(s); (c) Identify and map (with map references) the site(s) to be monitored; (d) Set out the frequency of monitoring; (e) Describe the procedures required to access the application site for the monitoring (in particular health and safety requirements); (f) Identify the parameters and methods used for the monitoring and assessments of effects on cultural health; (g) Set out the matters to be included in the Cultural Health Monitoring Report and the frequency of the reporting obligations; and (h) Set out the procedures for amendments to the Cultural Health Monitoring protocols. *Advice Note: there are multiple tools for assessing cultural health, including the Mauri Compass. The selection of the methodology is up to the body representing Māori interests.*	
45 GC	The Consent Holder must provide a copy of the Cultural Health Monitoring protocol, or any amended version, and any subsequent Cultural Health Monitoring Reports to the Council Manager within 1 month of receiving it. *Advice Note: These documents are the intellectual property of the Māori cultural health experts and are not subject to certification or review by the Consent Holder or Council.*	

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L2	**Plans**	
L3	**Monitoring Plan**	
46 GC	No later than six months after the commencement of this Consent, the consent holder shall submit to Council's Regulatory Manager for certification, a Monitoring Plan (MP), completed by a suitably qualified and experienced person. The MP shall be designed to monitor any effects of the irrigation system, storage of wastewater in the oxidation pond (e.g. though leakage), impacts on groundwater impacts on surface water. The MP shall include, but not be limited to: (a) ? (b) ? (c) ? The MP shall be considered certified unless the Council's Regulatory Manager, within 20 working days of receiving the MP, refuses to certify it, and outlines its reasons in writing for not certifying the MP. If the MP is not certified, an amended MP must be submitted. Once certified by the Council, the MP shall be implemented within three months.	
L3	**Operational and Management Plan**	
47 GC	No later than six months after the commencement of this Consent, the Consent Holder must submit to the Council's Regulatory Manager for technical certification an Operation and Management Plan (OMP) detailing (but not limited to) the following items: (a) A description of the treatment plant, storage, land application system and the HRLP system, including a site map indicating the location of discharge infrastructure, the land treatment area, and monitoring sites; (b) Intended operation and maintenance procedures for the land treatment system and the HRLP system, including the reduction of pathogens and how the systems will be operated and maintained to comply with these Conditions and the Conditions of Discharge Consents AUTH-127078-01, AUTH-127079-01 and AUTH-127077-01; (c) A methodology statement and summary setting out recent and proposed infiltration management. This should include forward work to reduced infiltration into the reticulated wastewater system, and a timeline for carrying out these works. (d) The procedures to be implemented to ensure that, where practicable, treated wastewater is discharged as a priority to land in accordance with the general conditions, including record-keeping procedures to demonstrate that the prioritisation has occurred; (e) A procedure to utilise the irrigation system to discharge at a higher application rate when storage is full and river flow conditions do not allow for the use of the HRLP system; (f) The measures to be implemented to control, regulate and record irrigation application, including application depths and details about how the management blocks within the land treatment area will be managed; (g) Cropping, pasture, grazing and harvesting management and maintenance procedures; (h) The frequency of flushing of the irrigation pipes and the circumstances under which pipe flushing will occur; (i) Measures to ensure the treated wastewater irrigated remains aerobic; (j) On-site responsibilities, including operation and maintenance of the wastewater treatment facilities and pipelines to the river and land discharge points; (k) Key operational matters, including daily, weekly and monthly maintenance checks, and the keeping of a maintenance register to record the details of all maintenance events and any system malfunctions; (l) Monitoring and reporting procedures required to demonstrate compliance with these Conditions (to water, to land, to air and to groundwater); (m) A description of any other on-farm operations affecting nutrient loading or leaching within the land treatment area (e.g. grazing, crops, fertiliser application); (n) A risk assessment plan and contingency plans in the event of system malfunctions or breakdowns;	

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	(o) Procedures for receiving, recording and responding to all complaints in accordance with Conditions (58 and 59); (p) A protocol for managing accidental discovery of artefacts of historic, archaeological or cultural significance during construction; (q) Mitigation and contingency measures for controlling odour, aerosols, ponding and run-off in and from the land treatment area, wastewater treatment and maintenance activities; (r) Procedures for the wind speed shut-down required by Condition 18; (s) Procedures for the rainfall induced shut-down required by Condition 10; and (t) Details of how changes in wastewater composition and volume are to be managed and measures to ensure ongoing compliance with conditions. (u)	
48 GC	The Consent Holder must review the OMP by 31 July of each year, commencing [x] [y] 2023 to incorporate any proposed changes to the management of the activities. Following each review, the OMP, including any proposed changes must be submitted to the Council's Regulatory Manager for technical re-certification before 30 November of the same year.	
49 GC	The Consent Holder must undertake the activities in accordance with the OMP that is most recently certified pursuant to Condition 47.	
L3	**Education Plan**	
50 GC	Within 12 months of the commencement date of this consent, the Consent Holder must prepare and implement a Wastewater Education Plan (WEP) detailing a multi-faceted programme designed to increase the public's understanding and awareness of how their [the public's] actions/activities can influence wastewater volumes, and the ways in which the public can reduce water use. Within six months after submitting the WEP to the Council Manager, the Consent Holder shall commence delivery of the WEP. The Plan shall be reviewed and updated annually.	

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L2	**Reporting and Notification**	
53 GC	Records of the inspections carried out in accordance with Conditions 25, 26 and 27 and any resulting system modifications must be recorded in the Annual Monitoring Report as required by Condition 57.	
54 GC	The Consent Holder must maintain a record of all irrigation activities authorised by this resource consent that occur within the land treatment area. This record must include but not be limited to: (a) The date, time, location and volume of each irrigation (both of wastewater and water); (b) The date, time, location, mass (kg) and rate (kg/N/ha or kg/P/ha) of any nitrogenous and phosphorus material applied; (c) The total cumulative nitrogen applied from all sources to each irrigation run over the period 1 July each year to 30 June the following year; (d) The hydraulic loading (application depth in mm) for each application of wastewater to each irrigation run; (e) The volume (m^3) of wastewater applied to each irrigation run for each application; (f) The area of pasture or crop that were irrigated in each block, and for crops, the type of crop irrigated, and; (g) The date and time of pipeline flushes when they occur. Records shall be reported included in the Annual Monitoring Report as required by Condition 57.	
54(a)	The mass and rate of total nitrogen applied to each irrigation run or irrigation area during each application of wastewater, as specified in condition 54 of this consent, shall be calculated as follows: a) The average monthly total nitrogen concentration (g/m3) shall be calculated by averaging the last wastewater sample from the previous month and the wastewater sample in the month to be calculated. These samples shall be taken in accordance with condition 37 of this consent. b) The average monthly total nitrogen concentration for each month shall then be multiplied by the volume (m3) of wastewater applied to each irrigation run or area, in order to calculate the mass of total nitrogen applied (kg) per application to each irrigation run or area. c) The mass of total nitrogen applied (kg) per application shall then be divided by the area (ha) of each irrigation run or irrigation area to calculate the rate (kg N/ha) of nitrogen loading per application per irrigation run/area. d) The area (ha) irrigated during each application of wastewater shall be calculated by multiplying the distance the travelling irrigator travelled by the irrigation run/area width, or the segment/area irrigated by each centre pivot.	
55 GC	The Consent Holder must maintain a record of all HRLP discharges authorised by this resource consent. This record must include but not be limited to: (a) The date, time, location and volume of each discharge; and (b) The river flow at the time as measured at the ? site. Records shall be reported included in the Annual Monitoring Report as required by Condition 57.	
56 GC	The Consent Holder must notify the Council Manager as soon as practicable and no later than within two working days of 24 hours from the identification of any actual or potential non-compliance or when it becomes evident that a breach of Consent Conditions is about to occur. For conditions requiring compliance with a particular water quality standard, notification to the Council Manager is required within two working days 24 hours of receipt of the water quality analysis result from the Laboratory of the non-compliance.	
	Annual Monitoring Report	

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57 GC	By 31 September of each year (commencing 31 July 2023) the Consent Holder must provide the Council's Regulatory Manager an annual monitoring report for the 12 month period ending the previous 30 June. The annual monitoring report must include (but not be limited to): (a) Results of sampling and a summary and interpretation of analyses and records collected in accordance with these conditions; (b) Comment on compliance with each of these Conditions, including the effluent standards; (c) A summary of inspections made on the physical infrastructure in accordance with Conditions 25, 26 and 27; (d) Results of soil sampling required by Condition 34, and an analysis to determine whether any material change in soil quality has occurred and actions taken to remedy any nutrient deficiency or excess; (e) Results of groundwater monitoring required by Conditions 35 and 36, including an assessment of whether there has been a decline in groundwater quality due to the activities; (f) Results of soil moisture monitoring including graphs of soil moisture content against key soil moisture reference points including saturation point, wilting point, field capacity and any defined irrigation trigger points. (g) Results of surface water monitoring required by Conditions 37, 38 and 39, including an assessment of whether there has been a decline in surface water quality due to the activities; (h) General comment on any non-compliances and operational problems; (i) Details of any works undertaken or proposed to improve the performance of the treatment system; and (j) A copy of the complaints register required by Condition 59.	
	System Review Report	
57(a)	Within five years of the commencement date of this consent, and there after every 5 years, the Consent Holder must prepare a 'System Review Report' including but not limited to summaries of: (a) the volume applied to land and discharged to the HRLP; (b) when the HRLP was used and the river flow conditions at the time; (c) changes that have been made to the wastewater treatment plant and details of changes proposed; (d) all monitoring undertaken as required by this consent, including Mauri monitoring, and may include additional monitoring undertaken by the Consent Holder; (e) Undertake assessment of the appropriateness of flows of the Tukituki gauging site as a predictor of median flows in condition 12; (f) Undertake assessment of application rate regime and potential adjustments to loading rates in Conditions 6 and 7 to optimise overall nitrogen and phosphorus contribution to ground and surface water. Changes shall be consistent with FEMP updates as required by AUTH-127616 (production land use consent);and, (g) storage utilisation and opportunities to better utilise it to avoid the use of the HRLP. Further, management of the system can be updated, with proposed changes to be made as necessary to the Operation and Management Plan after an annual review by the Consent Holder.	In response to CIA
57(b)	Following the completion of the System Review (Condition 57a), the Consent Holder shall within one year set out a series of steps and changes to be implemented for continual system improvement, and reporting, within the next four years. Implementation and reporting shall consider obligations of the long term planning process including funding availability and asset ownership.	
	Spillages and Complaints	
58 GC	The Consent Holder must maintain and make available to the Council's Regulatory Manager on request, a record of complaints which lists all complaints received alleging adverse effects attributable to the activities. The record must include but not be limited to the following: (a) Name and address of the complainant (if given);	

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	(b) The nature and duration of the effect; (c) The date and time the effect was detected; (d) The location where the effect was detected; (e) The prevailing weather conditions when the effect was alleged to be occurring e.g. wind speed and direction; (f) The likely cause of the effect detected; and (g) Any measures taken to mitigate the alleged effect and to avoid its recurrence.	
59 GC	The consent holder shall establish and maintain a 'complaints register' to record the date and time of any complaints received and from whom, the nature and location of the complaint, and any actions taken in response to that complaint. A copy of the complaints register shall be made available to the Council on request.	
60 GC	The Consent Holder must immediately notify the Council's Regulatory Manager and chairs of Te Rongo o Tahu marae and Rākautātahi marae of, and keep a record of, any major spillage of material into the wastewater collection system that may adversely impact on the wastewater treatment plant, the land application system or the river discharge system that have the potential to or will result in a non-compliance with any of the conditions of the activities authorised by these Consents.	From CIA.
60(a)	If an event occurs on-site that may lead to <insert description of effect>, the Consent Holder shall notify the <insert name of registered drinking water supply> and the Hawke's Bay Regional Council (Manager Compliance) of the event as soon as reasonably practicable after the event occurs Advice Note: Such an event might include for example <insert an example relevant to the application you are processing>. The <name of registered drinking water supply> can be contacted on <insert phone number>. The Regional Council 24 hour Pollution Hotline should also be contacted on 0800 108 838.	
L3	**Accidental Discovery**	
61 GC	In the event of an archaeological site, waahi tapu or koiwi being discovered or disturbed during the activities, the Consent Holder must immediately cease further work in the immediate area and inform Te Rongo o Tahu marae, Rākautātahi marae, Te Taiwhenua o Tamatea, the Council's Regulatory Manager, Heritage New Zealand and (in the event that human remains are found) the New Zealand Police. Further work at the immediate area must be suspended while Iwi carry out their procedures for the removal of Taonga. The Council's Regulatory Manager will advise the Consent Holder when work can resume. *Advice Note: In accordance with Section 14(1) of the Coroners Act 2006, in the event that human remains are found the NZ Police should be contacted immediately and all works in the immediate vicinity will cease until advice is given that works can recommence.*	From CIA. Further work is required to establish a protocol that is acceptable to all parties.

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Takapau WWTP Conditions – 14 December 2021 – Version 6

L2	Review	
62 GC	The Hawke's Bay Regional Council may annually during the month of May review the conditions of the consent in accordance with Sections 128, 129, 130, 131 and 132 of the Resource Management Act 1991 for the following purposes: a) To address any adverse effect on the receiving environment that can be reasonably attributed to the Activities which may arise from the exercise of the resource consent and which is appropriate to deal with at a later stage; b) To modify the monitoring programme required by the resource consent or require additional monitoring if there is evidence that the current monitoring requirements of the resource consent are inappropriate or inadequate; c) To modify the reporting requirements of the resource consent if there is evidence that the current reporting requirements of the resource consent are inappropriate or inadequate; d) To address any new regional or national rules, standards, or regulations relating to freshwater and/or coastal water management; e) To identify new registered drinking water suppliers that may be directly impacted by the discharge under condition 60(a); f) Review of the median flow of Tukituki at Taiparu Road from State of the Environment reporting and update the location if a new one becomes available.	
63	The Hawke's Bay Regional Council may, every five years, during the month of May review the conditions of the consent in accordance with Sections 128, 129, 130, 131 and 132 of the Resource Management Act 1991 for the following purposes: a) To review the appropriateness the nitrogen and phosphorus limits in condition 7 having regard to usage by crops over the previous five years. b) To review the appropriateness nitrogen and phosphorus limits in Condition 7 having regard to new national and regional planning policy regulatory framework. c) changes of consent conditions and / or treatment system in respond to system review reports undertaken in accordance with Conditions 57(a).	

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Appendix 4 – Pre-Hearing Report for 3rd Pre Hearing Meeting (Tuesday 28th June 2022)

FURTHER PRE-HEARING MEETING REPORT OF CHAIR PRESIDING PURSUANT TO SECTION 99 OF THE RESOURCE MANAGEMENT ACT 1991 (RMA)

TAKAPAU WASTEWATER TREATMENT PLANT DISCHARGE RESOURCE CONSENT APPLICATION

Introduction

1. This is the second pre-hearing report I have prepared, having been appointed by the Hawke's Bay Regional Council (**the Council**) to Chair this and a previous pre-hearing meeting regarding the application made by Central Hawke's Bay District Council (**CHBDC**) for the Takapau Wastewater Treatment Plant (**WTP**) discharge.

2. In my previous report, issued following the pre hearing meeting which took place on 13 December 2021, I gave an overview of the application and activity proposed along with the matters discussed.

3. I also set out in some detail (albeit by way of summary), changes to proposed conditions of the resource consent for the Takapau WTP that had been agreed at that meeting.

4. I recorded that all substantive issues raised at the meeting and related conditions had been essentially agreed by all parties, albeit subject to CHBDC providing further information on certain matters (along with HBRC on certain other matters).

5. In response to that further information, the HBRC reporting officer who is responsible for processing the application (Ms Edmead) had prepared a s 42A report regarding the application.

6. This report recommended that the application be approved subject to conditions, including a number of amendments to the conditions of consent agreed at the previous pre-hearing meeting, including in light of the further information received from CHBDC, and further consideration of the issues arising (with the benefit of advice from HBRC's technical advisers).

7. As also evident from the content of that report and discussion at this latest pre-hearing meeting, there had been a degree of interchange between Ms Edmead and the CHBDC representatives since the last pre hearing meeting.

8. Both parties wished to determine whether two key outstanding matters raised in the s 42A report could be resolved through further discussion, rather than the consent being issued on the conditions proposed in that report, or by way of decision from an independent commissioner.

9. The two principal outstanding issues needing to be discussed at the further pre-hearing meeting involved:

   (a) The “end of pipe” (prior to discharge) performance standards to be set through (now) condition 3; and

   (b) Duration of consent.

10. The other proposed changes to conditions agreed at the previous pre-hearing meeting were (to my understanding) accepted by CHBDC.

Parties Attending

11. The same parties as attended the previous pre-hearing meeting were present but with CHBDC additionally represented by Messrs Chris Moore and Garrett Hall (Planner and Engineer at Beca, advising CHBDC).

12. Set out below is a brief record of the discussion held and the outcome reached on each principal issue remaining in contention.

Condition 3 – Performance Standards

13. The previous pre-hearing meeting report recorded my understanding that the terms of condition 3 had been agreed subject to the provision of further information from CHBDC as to the basis of the proposed limits for total suspended solids (TSS), dissolved inorganic nitrogen (DIN) and *E.Coli* in particular.

14. The s 42A report advises that this further information was supplied through a letter dated 22 December 2021, which replaced previous “place holder” limits included in a draft set of consent conditions submitted with the application, with (in some instances) higher limits, particularly for biological oxygen demand ($cBOD_5$), TSS and ammoniacal nitrogen.

15. At the meeting, CHBDC explained that the AEE was prepared on the basis of what was being discharged directly to the river to this point, rather than previous compliance limits or the place holder limits themselves.

16. Ms Edmead had advised through her report that the new limits were not only higher than in the publicly notified “place holder” conditions, but substantially higher in some instances than the actual levels of these contaminants in the existing discharge based on past monitoring results, and as assessed in the Beca Surface Water Assessment report undertaken for the application.

17. To that point, it was noted that the proposal in the s 42A report to set limits (based on the past monitoring data) for stages 0 and 1 of the consent (prior to completion of the full irrigation area at 20 hectares) would put CHBDC in a situation of immediate non-compliance.

18. After considerable discussion on this point, it was agreed that CHBDC would propose a set of limits for stages 0 and 1, based on the ‘2 out of 12’ and ‘8 out of 12’ sampling model of the previous condition 3, and more closely aligned to past monitoring data, but without raising this immediate compliance issue.

19. However, with respect to stage 2, and given the prospect that discharges to the Makaretu River could continue in conditions of median or higher river flow, the Council was concerned to ensure that the higher proposed limits would not have an adverse surface water impact at or downstream of the discharge point.

20. To that end, it was agreed that CHBDC would provide the following information to the Council (as confirmed to me by email following discussion between Mr Hall and Ms Lough):

> *A near-field mass balance water quality assessment will be undertaken to assess potential near field water quality effects of the proposed intermittent discharge to the High Rate Land Passage and subsequently the Makaretu River for stage 2 of the proposed discharge. This assessment will be undertaken for the following two scenarios as envisaged by the draft consent conditions (draft condition 12(c)(ii)and(iii)):*
>
> - *Treated wastewater discharge rate of 800 m^3/day, when the river is at median flow (9,470 L/s)*
> - *Treated wastewater discharge rate of 1,000 m^3/day, when the river is at 3 x median flow (28,410 L/s)*
>
> *The discharge treated wastewater quality parameters will be those presented in draft condition 3 (including the stage 1 onward E. coli condition).*
>
> *Results will be presented in a brief memo comparing the predicted downstream concentrations to those recorded upstream (as per the methodology applied in the Water Quality Assessment – Makaretu River, Beca, Doc ID: Beca, 2020 – TD.25). Brief commentary will also be provided on potential downstream effects on the Tukituki River catchment.*

Consent Duration

21. On the issue of duration, CHBDC presented information addressing concerns raised in the s 42A report (and as identified by Ms Edmead in the proposed agenda for the meeting) as reasons for recommending a 20 rather than 35 year duration of consent.

22. These reasons included:

- Uncertainties over the effluent quality standards for stage 0, stage 1 and stage 2 (as addressed above).
- Unknown effects and cumulative effects, and specifically the potential for diffuse discharge on other tributaries of the Tukituki eg the Porangahau Stream catchment (through a groundwater pathway).
- Unknowns in treatment quality, with particular regard to the impact on surface water (as to be addressed through the further information to be provided, above).
- Unknowns in how the farm will be managed.
- Current exceedance of the Change 6 targets for nitrogen within groundwater underlying the site.

23. Without going into too much detail, basic points made by CHBDC in addressing those concerns included that:

(a) Relative to existing contaminant levels including through the groundwater pathway, there will be a net reduction in nutrient loadings compared with a baseline scenario involving existing farm operations and the surface water discharge, conservatively assessed at least 10% for nitrogen, and much greater than that for phosphorus.

(b) The concern that groundwater levels are above the Plan Change 6 targets is “out of context”, with the monitoring data relating to shallow groundwater, whereas the targets apply below 10 metres or at greater depth.

(c) There is nothing unknown about the wastewater treatment process (it will continue as at present, but with the addition of filtration and UV) nor for that matter as to farm management, which would be determined through the farm environmental

management plan which needs to be certified under proposed consent conditions, and cover all inputs including land irrigation.

24. To these points Ms Lough and Ms Edmead responded that the uncertainty is not so much over farm management, but the interface between that and irrigation loadings, which would not be under the farmer's control. Further, that regardless of the depth at which nutrient levels had been assessed as higher than the Plan Change 6 targets, that groundwater is all ultimately connected to surface water.

25. A further concern raised by the Council's technical experts is that the Porangahau Stream may be the ultimate receiving environment of diffuse groundwater discharges when the groundwater surfaces.

26. The s 42A report advises that there is therefore a concern that the groundwater leaching from the land discharge would contribute to the cumulative increase in nutrients at other locations.

27. The outcome on this point was that the Council would consider the additional information provided on the uncertainties and issues of concern relevant to consent duration identified in the agenda.

28. Further that Ms Lough would provide to CHBDC information as to the potential for a connection through groundwater with the Porangahau Stream, for CHBDC to consider and respond in turn.

Other Matters

29. Mr Ball reiterated points made at the previous pre-hearing meeting as to the need for progressive improvement and review of consent conditions at specific stages, to ensure that the limits set now do not remain in place for the full duration of the consent, and respond as further information comes to hand about the cumulative effects of improved nutrient management within the relevant catchments, along with scientific understanding of nutrient related effects.

30. It was suggested in this context that condition 76 could be amended to provide for five yearly reviews of the performance limits for the discharge in condition 3, ie in addition to the nitrogen and phosphorus limits in condition 8.

Outcomes

31. Against that background, the following outcomes were agreed:

(a) CHBDC to provide proposed revised performance limits for stages 0 and 1.

(b) CHBDC to provide the information on surface water impacts of the proposed discharge performance standards for stage 2 as set out above.

(c) Council to provide information regarding potential groundwater connection to Porangahau Stream, for CHBDC to respond to in turn.

(d) Condition 76 to be amended to reference a review of the condition 3 performance limits.

(e) Section 42A report to be revised within 10 working days of CHBDC's response on the Porangahau Stream groundwater connection issue.

32. Whether there needs to be a hearing on the issue of consent duration will depend on the final recommendation as to duration in the s 42A report, as completed with this information all to hand.

……

Martin Williams
Pre-Hearing Meeting Chair

Dated: 01 July 2022