

8 November 2021

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Attention: Tania Diack & Sven Exeter

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Dear Tania and Sven,

REQUEST FOR FURTHER INFORMATION – PŌRANGAHAU/ TE PAERAHI WASTEWATER DISCHARGE APP-126770

Thank you for your request for further information regarding Central Hawkes Bay District Council's application for resource consent (APP-126770). This letter provides:

- A. Response to the information requested in accordance with s92, with supporting documents.

The above information is supported by several additional documents. These are set out as Annexures to this letter.

A) Section 92 request for further information

Cultural Impacts

1. *Please provide a cultural impact assessment for proposed discharges from the Pōrangahau and Te Paerahi WWTPs for stages 0, 1 and 2 and proposed new combined discharge scheme for stage 3 including commentary on the staging and timing.*

Response:

A draft cultural impact assessment has been provided by iwi regarding the consent application. We are finalising a response to this CIA request which includes an assessment against relevant policy. This will be provided shortly.

Affected Party Approvals

2. *Appendix C of the Consent Application & AEE (PD1) provides an "Affected Party Approval". The document states "Treatment improvements to existing ponds (UV, filtration, screens)" however it is unclear if the existing ponds will indeed have 'UV, filtration, screens' added during stages 0, 1 and 2. Please confirm if and when UV, filtration and screens will be installed at the existing ponds.*

Response:

UV treatment will be applied to all wastewater flows irrigated at the Discharge Property for all stages. Some upgrades to the Pōrangahau and Te Paerahi WWTPs had been proposed, however these have now been discounted primarily due to the limited time they would be used before being switched over to the new irrigation system. It has been decided that money should be better spent towards the longer term solution.

3. *On 25th February an email was received by CHBDC on behalf of the landowners approving the application for the 'transitional consent'. The email approval was conditional on CHBDC demonstrating progress towards a long-term solution. Consent conditions have been proposed to address these requirements. Do the proposed consent conditions meet Puketauhinu Trust's expectations? We note that this can be dealt with via a submission.*

Response:

Regular correspondence has been had with Puketauhinu Trustees around the Te Paerahi WWTP discharge and the cessation of this. Puketauhinu Trustees have been provided with the consent application and supporting documentation which meets their expectations. Following consent lodgement, CHBDC has had further correspondence within Puketauhinu Trustees around the consent application and they haven't indicated a problem with the proposal.

4. *A number of consent application documents appear to be prepared after the date of the signing of the written approvals. Please confirm that the Stoddart's understand all changes made to the proposal since the date they signed the written approval. For example, are they comfortable with the proposed buffers on the farm? Does the planning assessment that was prepared after they signed the written approval align with their understanding?*

Response:

Regular correspondence has been had with the Stoddarts around the consent application. The Stoddarts have read and reviewed relevant documents and made comments on the draft application and conditions. The process and approvals reflect the opportunity the Stoddarts had to review drafts and allow finalisation once their feedback had been received. Despite the approval form being dated prior to lodgement, the Stoddarts are comfortable with the proposed conditions.

We are currently working on more formal contractual arrangements with the Stoddart's and anticipate a letter to support the project to be submitted in December 2021.

Proposed Consent Conditions

5. *Please provide the percentile limits for Table 3, Condition 41 and Table 4 Condition 48.*

Response:

Please see parameters as follows:

Table 3, Condition 41: *The daily volume of wastewater discharged from the pond over any 12 month period shall not exceed 200 m³/d for more than 50 % of the time, nor shall it exceed 400 m³/d for more than 5 % of the time, as determined by daily flow records collected in accordance with Condition 9.*

Table 4, Condition 48:

- a. *The concentration of Carbonaceous five-day Biochemical Oxygen Demand (BOD₅) must not exceed 25 g/m³ in more than 8 out of 12 consecutive monthly samples, or 40 g/m³ in more than 2 out of 12 consecutive monthly samples;*
- b. *The concentration of Total Suspended Solids (TSS) must not exceed 30 g/m³ for more than 8 out of 12 consecutive monthly samples, or 50 g/m³ in more than 2 out of 12 consecutive monthly samples;*
- c. *The concentration of Ammoniacal Nitrogen (NH₄-N) must not exceed 20 g/m³ for more than 8 out of 12 consecutive monthly samples, or 40 g/m³ in more than 2 out of 12 consecutive monthly samples;*

- d. *The concentration of Dissolved Reactive Phosphorus (DRP) must not exceed 5 g/m³ for more than 8 out of 12 consecutive monthly samples, or 9 g/m³ in more than 2 out of 12 consecutive monthly samples;*
 - e. *The concentration of Escherichia coli (E. coli) must not exceed 500 cfu /100 mL for more than 8 out of 12 consecutive monthly samples, or 5,000 cfu/100 mL in more than 2 out of 12 consecutive monthly samples; and*
 - f. *The pH range shall be within the range of 6.5 – 9.*
6. *Table 4 condition 58 sets a 20 m riparian margin of the Pōrangahau River - there does not appear to be any reasoning for the 20m riparian margin in the consent application suite, please provide details.*

Response:

A 20 m buffer from waterways has been adopted as this is common for wastewater discharges. The HBRC Regional Resource Management Plan and Tukituki Plan Change 6 both apply a 20 m buffer from waterways as a permitted activity for waste to land activities. Additionally, The Horizons One Plan and Canterbury Land and Water Regional Plan are examples of two other Councils adopting the same buffering distances from waterways for these discharge types.

Water Quality

7. *The basis of the staged mass balance and load estimates assessment (Section 6 of Pōrangahau and Te Paerahi Wastewater – Water Quality Assessment, Beca, 2021:P:D.25) needs to be checked, and that a clearer description of its purpose, methods, assumptions, results, and limitations of that assessment be provided.*

Response:

A description of the purpose, methods, assumptions, results and limitations of the assessment for the staged mass balance is provided within the attached Beca (2021:P:D.25) letter (Annex A).

8. *Please provide a quantitative microbial risk assessment (QMRA), in accordance with the Ministry of Health's microbial guidelines and/or the relevant best practice guidelines, on the potential health risks to users of Pōrangahau River. Technically robust information must be provided as part of the assessment including appropriately detailed approaches to how the risks will be mitigated.*

Response:

A QMRA is being prepared and will be made available when completed. This is expected in December 2021.

Land Irrigation Matters

9. *Appendix A Figure A2 appears to show the discharge area crossing the property boundary. If there is a mapping error or for clarity, please amend Figure A2 so that the discharge area and irrigable areas are not shown to be crossing the property boundary.*

Response:

This mapping error was the result of the LINZ property parcels not lining up with the actual property boundary shown in the aerial imagery. No irrigation will occur outside of the property boundary. This figure has been amended and is provided in Annex B.

10. *When will the purchase of the land for the wastewater storage pond happen?*

Response:

Council have entered into contractual discussions with the Stoddarts. This information is in progress and not at a stage to be shared.

11. *Will land be purchased for the WWTP too?*

Response:

Same as above, yes. Council have entered into contractual discussions with the Stoddarts. This information is in progress and not at a stage to be shared.

12. *What protection or mechanism ensures that the land discharge site will be able to be used by CHBDC for the discharge for the requested 35-year consent duration given that it does not appear to be covered under a land purchase or designation?*

Response:

Council have entered into contractual discussions with the Stoddarts. This information is in progress and not at a stage to be shared.

13. *It is assumed that CHBDC or a suitable operator will operate the WWTP. Will the landowner operate the irrigation scheme, or will this also be operated by CHBDC?*

Response:

CHBDC will manage and operate the WWTP system. The Stoddarts will operate the irrigation system, however this will be done with support and oversight from CHBDC.

14. *The applicant indicates the minimum area used for irrigation for each stage and that they have used this for the Overseer modelling. Does the actual proposed irrigation area differ from this and, if so, how does it affect the nutrient loss?*

Response:

Minimum areas were used in Overseer modelling. These were 4 ha (Stage 1), 10 ha (Stage 2) and 40 ha (Stage 3). These land areas have potential to be expanded depending on landowner preferences and costs for construction. Discussions with the landowner are ongoing around maximum irrigation areas. Expanding the land area but maintaining the same discharge volume (and areal application limits), allows the application depth to be reduced minimising nutrient losses.

Expanding the irrigation area above minimum areas outlined in the application allows for targeted nutrient and water applications. Wastewater is not expected to substitute all fertiliser applications over a crop rotation but rather supplement this. Fertiliser will still be required.

15. Please provide additional information about how the irrigation is proposed to be managed, specifically regarding application event frequency, application event depth and monitored to minimise drainage resulting in leaching and/or overland flow or surface ponding.

Response:

Irrigation will be through a combination of deficit to non-deficit conditions. During summer months, irrigation will largely be via deficit conditions, with non-deficit irrigation occurring if soils have a higher soil moisture content, irrigating up to field capacity predominantly on the sandy LMU 3 soils.

Application depth will be limited by conditions, with varying run times to deliver up to this maximum depth. Overland flow and ponding will be observed and management applied to avoid such conditions. Again, avoiding these conditions will be set out as a condition of consent.

16. Please provide further assessment of an appropriate application depth per event within LMU 3 including an assessment of the change in nutrient leaching at a maximum of 20 mm/event and a maximum of 25% of the PAW.

Response:

The design application rates for all areas, including IMU 3 has been determined from field investigations and not literature.

Regarding nitrogen leaching in IMU 3, the irrigation mass leached has been computed using Overseer. As part of this, we have included irrigation under the wet soils system to this, and assume all the applied nitrogen from this wet soils system is leached. This has then formed the basis of our total nitrogen loss estimation.

Consequently, the approach used is worst case and assumes maximum leaching with reality being less.

17. Please provide an assessment of the risk of overland flow from the irrigation site (LMU 1 and LMU 3) and the effect of any potential overland flow on the receiving environment.

Response:

Overland flow is not expected to be an issue across the Discharge Property.

For IMU 1, due to the poorer draining nature of these soils application depths will be lower in comparison to those on IMU 3. Additionally, irrigation to IMU 1 is to be ceased prior to overland flow becoming an issue, primarily as a result of application during deficit conditions and ensuring the application rate is less than the soil's infiltration rate.

For IMU 3, irrigation rates will be up to a maximum of 20 mm per event with typical rates being between 6-12 mm. This is significantly lower than the measured Ksat and K_{-40 mm} for the IMU 3 soils. These were measured at 106 mm/h and 14 mm/h respectively (LEI, 2020:P:B.15).

18. Please provide information on the length of the proposed suitable standdown periods and the expected residual pathogen level based on the concentration of pathogens in the irrigated wastewater and the length of the standdown periods.

Response:

The New Zealand Guidelines for Utilisation of Sewage Effluent on Land (NZLTC:2000) suggests 48 hour withholding period for secondary treated wastewater. The Victorian EPA reclaimed water guidelines suggest 4 hours for secondary treated wastewater with disinfection (Class C). The proposal is to use 24 hours using UV disinfection.

Based on the guidance above, residual pathogen levels will not influence land management.

Residual pathogen management will not impact on the receiving environment and therefore no further assessment is needed.

19. Please provide a map of the site where all areas proposed not to be irrigated (due to buffer distance, soil type, land use or any other reason) are clearly shown. The map should show the area of each excluded zone and the total available area for irrigation within LMU 1 and LMU 3.

Response:

A figure showing all buffers associated land areas is provided in Annex B. The balance of the land areas for LMU 1, 2 and 3 are irrigable areas. For Stages 1-3, the minimum land area required for irrigation will potentially rotate anywhere within the larger LMU.

Wastewater Management & Timing

20. Please provide the timeframes proposed for the commencement and completion of each stage.

Response:

Proposed stage commencement and completion timeframes are as follows assuming consent granting mid 2022:

- Stage 1 operational in 2023;
- Stage 2 operational in 2027; and
- Stage 3 operational in 2030.

These timeframes are dependent on consent processing, as well as material and contractor availability.

21. Evidence why partial irrigation under Stage 2 is preferable to non-deficit irrigation of the highly permeable sandy soils.

Response:

The conceptual design set out two possibilities for managing Pōrangahau's wastewater during wet conditions. Stage 2a provided for 100 % of Pōrangahau flows to land. Stage 2b provided for some river discharge to avoid the soils being overloaded because wet weather buffering was not possible (i.e. storage is not on line until Stage 3).

In reality Stage 2 will see a combination of these two substages implemented. A partial river discharge will occur to manage wet weather events when irrigation is limited and the river is above median flow. Regardless, the assessment undertaken has assumed the worse case with for the land assessment Stage

2a applying and for the river assessment Stage 2b applying. As both 'worse' cases will not occur at the same time, the actual effects will be a combination and less than the stated individual effect.

22. Explain how the decision-making regarding storage volumes and deficit/non-deficit irrigation will be made.

Response:

Application via deficit irrigation is preferred as this maximises irrigation efficiency, including plant uptake and decreasing leaching. To operate a deficit only irrigation system, significant storage will be required to balance the need for maximum storage the use of non-deficit irrigation and the wet soils system is proposed.

Decision making around the type and timing of irrigation will be decided by the landowner. Training will be provided around system operation to manage storage volumes. The key emphasis will be on beneficially using the water and hence maximizing deficit irrigation. The wet soil system will largely be used as a contingency when storage is full and deficit (or non-deficit in the appropriate places) cannot be used.

23. We note that the 4 and 9 years are proposed to remove the existing discharges from Te Paerahi and Pōrangahau respectively. Please explain the reasoning for this extended period, when almost no new treatment or storage infrastructure is planned in this period.

Response:

The new treatment plant will be operation prior to Stage 3 commencing.

4 years for Te Paerahi and 9 years for Pōrangahau are the maximum time periods for the ceasing of all wastewater to these respective environments.

For each of these communities it is expected that the large majority of wastewater discharged to the current respective environments will be ceased prior to these dates. These dates are conservative as they allow for the Discharge Property to become entirely operational to receive all flows prior to decommissioning works at the WWTPs commencing.

Following Long Term Plan engagement, this time period was also consulted and engaged with the community to find a timeframe that balances the affordability constraints a project like this places on a small rural district let alone small rural towns.

24. For the duration of Stage 1 and Stage 2, treated wastewater from the existing Te Paerahi WWTP will be pumped to the new Discharge Property. There are no proposed changes to the Te Paerahi wastewater quality, other than the addition of UV treatment (at the Discharge Property to manage pathogen concentrations prior to wastewater being applied to the discharge property).

Appendix M - Pōrangahau and Te Paerahi Community Wastewater – Discharge Conceptual Design (LEI, 2021:P:C.15

Table 4.2 notes that the future flows assume a reduction in I&I at some point between now and 2057. Because no population growth is expected in the catchment the result of this is a design flow which is over 60m³/d less than the current known flows. This does not appear to be sufficiently conservative, for the following reasons:

1. *The draft CHBDC Inflow and Infiltration Management Strategy (Beca, 20 April 2021) provides no certainty that this community will receive I&I reductions in the near future;*
2. *I&I issues can be very difficult to find and remove;*
3. *I&I issues will continue to be added to the network over time as infrastructure ages and illegal connections are made; and*
4. *Climate change can be expected to have an increasing impact on I&I peak flows (noting that LEI, 2021:P:D.10 in Section 3.10.2 highlights an increase in summer and autumn rainfall of 2-13% by 2090).*

Response:

Detailed thought has been given to the flow calculations. Regardless, if there are increases in flows this will result in additional land area needed (which is available) while maintaining compliance with nominated application rate limits.

25. *Please confirm how this will affect flows to the treatment plant(s) if no I&I improvements are realised.*

Response:

This has been covered above. Regardless, the treatment plant will be designed for growth to ensure that effluent quality limits are met and maintained.

26. *Please confirm how the future flow curves in Figure 4.1 were derived.*

Response:

A reliable flow data was available from CHBDC monitoring for the Pōrangahau and Te Paerahi WWTPs for the period 01/01/08 – 30/11/19. Predicted population projections were calculated in Beca (2021:P:C.16) with growth projection factors applied to these past flows as a proxy to estimate future flows.

27. *Section 4.3 Wastewater Quality, notes that the expected effluent quality following the installation of a new WWTP at Stage 3, is as follows: average quality not exceeding*
- *20 g O/m³ carbonaceous biochemical oxygen demand;*
 - *30 g/m³ total suspended solids;*
 - *20 g/m³ total nitrogen;*
 - *5 g/m³ total phosphorus; and*
 - *500 MPN/100 mL E.coli (following UV disinfection).*

In the Beca report Outline of Proposed New Combined Treatment Plant Options (P:C.16), the proposed total suspended solids target is lower at 20 g/m³, and a much lower value of 20 g/m³ BOD (rather than the above cBOD) is proposed.

Please clarify which target values are proposed.

Response:

The values in Section 4.3 apply. Despite being slightly higher than the Beca report, the land application system will have plenty of capacity to manage organic material and suspended solid applications. Note that the assessment is based on the higher values.

28. *We note the proposed staging and timing of activities presented in Table 8.1. It is not clear whether the proposed timeframes are consecutive or intended to occur in parallel. In either case, they appear to be extremely conservative, and cannot be easily aligned with the proposed consent Stages.*

Please confirm which of the activities occur in sequence, and which occur in parallel to show alignment with the consent Stages.

Response:

Stages 1-3 are expected to have some degree of overlap to manage availability of contractors, materials and affordability. Council is working through a larger procurement strategy for upgrades at all their wastewater assets, and this will help refine the delivery of specific tasks.

However, the key aspects will be the discharge systems, being the continuation of the existing systems and the commencement of irrigation.

The key date that really matters is the cessation of the Pōrangahau River within 9 years (as noted with question 20 this is expected to be by 2030 subject to this consent being granted).

Further detail on the staging can be found here: <https://www.chbdc.govt.nz/our-district/projects/the-big-wastewater-story/porangahau-and-te-paerahi-wastewater-system-upgrades/>

BPO & Options Report

29. *The ability to implement change is primarily limited by funding. Council has through their 2021-31 Long Term Plan allocated \$17.6 M over the next 9 years, with the full system to be commissioned by 2030. Where is it described that this is the expected cost of the BPO, and how was this compared with alternatives?*

Response:

Financial aspects were largely not involved in the selection process of the BPO. Early engagement with the community provided clear direction towards a land discharge regime (this direction was made clear in the last consent iteration and therefore the concept of land application was a very clear message from the community). A continued surface water discharge or an alternative ocean outfall was not an option, therefore a land discharge was selected. With the selection of a land discharge regime came the nomination of a preferred discharge property. This selection of land to use was post BPO selection, and the choice of land was a technical/commercial decision. Aspects of the selected property and discussions with the landowner then determined the proposed system.

Community engagement for this application continued from where it was left following the previous re consenting process for the existing discharges. A summary of this previous process is outlined within LEI (2021:P:C.34) (Appendix A of the LEI (2021:P:C.12) BPO Report). At the time the Pōrangahau Environmental Management Team (PEMT) was established to develop a long term solution for wastewater discharges from the communities. This group developed a range of options for the discharges, one being land, however for several reasons were not pursued at the time. Consent conditions relating to the development of a long-term discharge solution were included into these existing discharge consents. Council picked up the conclusions and recommendations from this previous re consenting process as a basis for developing the future system and is what is in the resource consent being applied for.

Cost determination focused on pricing of various iterations for community reticulation and land options. These costings were subject to much debate and were presented through the Council's LTP process. The choice of a preferred option, including its cost, was reflected in the LTP decision with the option that is before the Regional Council being preferred.

30. Please confirm how financial aspects were addressed in the selection of a BPO.

Response:

The answer to this question has been largely answered in Question 29.

It is unclear the reasons to present BPO costs when the BPO has been selected and supported by the community, with costs for this option agreed to through the Council's LTP process.

31. The BPO Report includes an Appendix A, "P:C.34 – Porangahau/Te Paerahi Consultation Summary". This in turn includes a list of 3 Annexes of minutes of the stakeholder engagement meetings. The Annexes are not provided. Section 3.3 of the BPO report describes how a BPO selection committee was used to determine the BPO. At present the link between the community consultation / BPO selection committee and the BPO is not clear. Please provide the above 3 Annexes to present what was discussed at these meetings and how the BPO was arrived at?

Response:

Meeting minutes for community meetings in December 2019 and March 2020 have been provided, as well as an LTP community update in March 2021. Minutes for the hui at Rongomaraeroa Marae are not intended for the wider community. A copy of the presentation that was delivered for this hui has been provided.

The BPO selection process involved the Project team consisting of CHBDC, LEI and Beca representatives, with information and feedback from community engagement informing the choice.

Initial options presented within earlier meetings to the community provided a broad suite of all available options for Pōrangahau/Te Paerahi. Feedback was received by iwi and the community enabling options to be modified and/or discounted. The Pōrangahau/Te Paerahi communities expressed their opinions on each regime, whereby further modifications were made, essentially determining the nominated BPO decision. This BPO of a land discharge regime has been expressed by the community as being the preferred option with iwi members being shown across the preferred site for their opinions and observations.

As noted earlier, the BPO arrived at now is consistent with the recommendations and preference of the community during the last consenting process.

32. Te Paerahi and Porangahau Options Report (Beca, 2020:P:C.10). This Beca Options report does not select a preferred option, but rather identifies three vastly different solutions and notes that these will be considered through the LTP process. Figure 31 on page 67 is a strawman which portrays all three options together. The key notes that [C] = Conveyance, but we wonder whether this should be Combined Plant? Please confirm the definition of C.

Response:

The strawman essentially arrives at the point of a preference to combine treatment plants. This is now the confirmed option for which consent has been sought.

33. *The appendices for this report are not included, please provide them as they are referred to throughout the Beca 2020:P:C.10 report.*

Response:

The five appendices for the *Te Paerahi and Porangahau Options Report* have been made available via the shared portal.

Odour and Spray Drift

34. *The applicant indicates that WWTP process failures can result in odours but that these can be remedied before there is a risk of offensive or objectionable odours beyond the plant boundaries. What monitoring is done by operators and or what indicators of process failures are used to identify increased potential for odour and what contingency measures are implemented in these events?*

Response:

As with most rural wastewater treatment plants, there is not dedicated monitoring apart from observations of operators and neighbours.

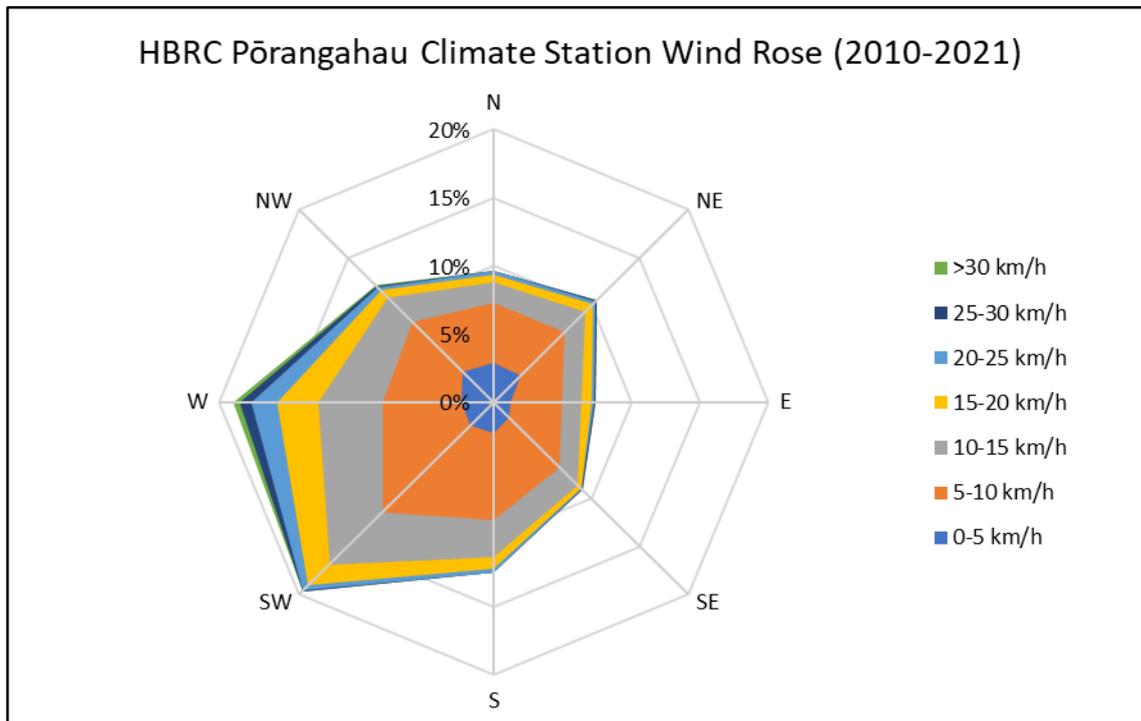
Despite this, there will be control measures to ensure the wastewater remains aerobic. This will be achieved through the use of dissolved oxygen monitoring, with low levels triggering alarms to operators. This will enable preventative/remedial action to be taken.

35. *Please provide a wind rose showing wind strength and direction to help inform the assessment of the potential for odours from the various activities to result in exposure and/or adverse effects from odours. At a minimum, please provide a description of the local prevailing wind conditions.*

Response:

A wind rose has been prepared for the HBRC Pōrangahau Climate Station for the period 2010-2021 showing average daily data and is shown below. The station is located inland towards Wallingford, 12 km from the Discharge Property and 11 km from the coast. We note that the Pōrangahau area lacks a reliable weather station with a long-term dataset for wind analysis.

The installation of a permanent weather station at the Discharge Property is underway and is to be erected within the next two months. This will provide more accurate and precise data for running the irrigation system.



36. How are biosolids proposed to be handled, dewatered, stabilised, and disposed of? Is CHBDC aware of this requirement? Will solids screening be included with the new WWTP and/or how will waste solids/sludge be managed to minimise odour? How will sludge be managed during decommissioning of the existing ponds?

Response:

A residual strategy is being prepared that will cover the management of biosolids/sludges from the new and existing WWTPs. Appropriate consents and approvals will be sought at the time needed. The current consent application relates to the proposed irrigation discharge to land only. We are not seeking consents at this point in time for the operation of the WWTP activities. The WWTP detailed design processes will determine the extent/scope of the operational consents that will be sought in due course prior to the commissioning of the plant.

37. Please provide evidence of the suitability of the proposed buffer distances, particularly to boundaries. This assessment should consider that the land between the estuary and the discharge property is publicly owned and easily accessible from the boat launching area at the Beach Road bridge. We also note the World Health Organisation guidelines for Safe Use of Wastewater suggest a buffer of 50 – 100 m may be required from roads and dwellings to protect public health.

Response:

There is no rule within the Regional Resource Management Plan that requires a distance from the property boundary. A distance of 5 m has been applied in this situation due to the rural nature of the discharge property and tertiary treated wastewater. Additionally, due to the Porangahau River running along the property's eastern extent, a 20 m buffer will be applied as aligning with the Regional Resource Management Plan.

World Health Organisation guidelines for Safe Use of Wastewater suggest a buffer of 50 -100 m for protection of residents. The term 'Residents' imply people residing and having long exposure times. In the case of the Discharge Property, there are no residences with this distance and any people would be transient (lower exposure time) and a lesser buffer can apply.

Groundwater

38. *Please confirm the expected E. coli concentrations in the discharge after UV treatment given the two different concentrations provided (500 and 5,000 MPN/100 mL).*

Response:

500 MPN/100 mL refers to median *E.coli* concentrations, whereas 5,000 MPN/100 mL refers to the 95 % percentile following UV treatment. We note this discrepancy between these two reports.

39. *We recommend monitoring should begin as soon as the consent is granted rather than waiting for the disposal field to be operational in order to build a database of existing groundwater quality. Please provide comment on background monitoring*

Response:

Background water quality monitoring has been occurring.

40. *The future use of the unmapped stock water bore on the disposal field property.*

Response:

The current stock water bore will continue to be used for stock water supply.

Wetland Ecology and Freshwater NES

41. *The ecological report indicates in section 4.1.1 that Site 1 was assessed as a natural wetland; however, Table 2 (section 4.1.2) in the ecological report indicates that Site 1 failed the pasture test. This is contradicting since for a wetland to be considered a natural wetland in terms of NES-F (2020) it should pass the pasture test. Analysis of the NES Freshwater regulations needs to be re-assessed in light of wetland 1 potentially being a natural wetland and any potential offsite wetlands with regard to the 100m setback clauses of the Freshwater NES.*

Response:

Please see attached letter (Beca, 2021:P:D.66a – Annex C). This letter concludes:

“To clarify, the pasture test helps us to determine whether the site meets the NPS-FM improved pasture exclusion criteria and is considered to be passed if there is more than 50% pasture species. If a site meets the pasture test, it would be excluded as ‘improved pasture’ under the NPS FM. Therefore, by failing the pasture test, Site 1 is considered to meet the definition of a natural wetland and as such, the NES regulations will apply.”

42. No reference is made in the AEE and Discharge Property Ecological Report (Beca 2021:P:D.66) of the details of the pasture test (methodology and results) such as the exotic pasture species present and details of the percentage ground cover as described in the interpretation guidance in the Interpretation guidance on the wetlands definition in the NPSFM and Freshwater NES (Exposure draft 7 April 2021). Please provide details of the pasture tests for Sites 1 and 2.

Response:

Please see attached letter (Beca, 2021:P:D.66a – Annex C). This letter concludes:

“The pasture test is used to evaluate whether there is > 50% cover of exotic pasture species (based on pasture species classifications by Stewart et al., 2014) within vegetation plots. As described above, this is intended to help determine whether a site would meet the NPS-FM improved pasture exclusion criteria (in conjunction with an assessment of whether the area is subject to temporary rain-derived water pooling or has a more permanent wetland hydrology). Pasture species cover was 15% of Site 1, and pasture species cover was 46% of the vegetation plot at Site 2.”

43. In terms of Table 2 (section 4.1.2) wetland hydrology indicators were present in both Site 1 and Site 2. Please provide details on how hydrology was determined.

Response:

Please see attached letter (Beca, 2021:P:D.66a – Annex C). This letter concludes:

“Sites 1 and 2 are relatively low-lying and are located along the margins of a tidally influenced section of the Pōrangahau River and thus are considered to have primary indicators of wetland hydrology (1B: Groundwater & 1C: Soil saturation) according to the MfE Wetland Hydrology Tool. Site 1 also passes the facultative-neutral test (secondary indicator 4D).”

44. Table 2 (section 4.1.2) indicates ‘Yes’ under soils and the soils have been described in section 4.1.1. Were the soils assessed if they meet the criteria of hydric soils in terms of the Hydric soils – field identification guide/Hydric Soils tool (Fraser et al, 2018)? Please provide details of this assessment.

Response:

Please see attached letter (Beca, 2021:P:D.66a – Annex C) for response.

45. In terms of the NES-F (2020), the regulations apply to the discharge of water within, or within a 100 m setback from a natural wetland. Did the applicant identify wetlands and include plans of any wetland, with surveyed boundaries within 100 m of the subject site? If not, please provide this information.

Response:

Please see attached letter (Beca, 2021:P:D.66a – Annex C). This letter concludes:

“Wetland 1 was the only putative wetland identified within 100m of the proposed discharge area via desktop assessment (methods are described in more detail in response to question 46 below).”

Additionally, a 100 m buffer from ‘Wetland 1’ will be implemented as a part of the application. This will be implemented to comply with the NES-F Regulation 45 (4) to ensure that there is no irrigation within

the 100 m setback of a natural inland wetland. No consent under the NES-F is required. The ecological assessment was undertaken on the basis that no buffer zones were applied and concludes that the overall level of effect is low (i.e. less than minor) and not expected to result in any loss of potential ecological value. This ecological conclusion is without the 100 m buffer being applied.

46. *The ecological study (Beca 2021:P:D.66) screened several potential wetlands (sites 3 to 11) although very limited information is provided on the assessment of these sites. Please provide details about the criteria used for the assessments of these sites.*

Response:

Please see attached letter (Beca, 2021:P:D.66a – Annex C) for response.

47. *No specific reference was made in the Discharge Property ecological report on how the hydrological regime of the wetland could be affected and how the hydrology of the wetland may need to be managed. Could the applicant provide details on the effects on the wetland hydrology and how the wetland hydrology could be managed?*

Response:

Please see attached letter (Beca, 2021:P:D.66a – Annex C). This letter concludes:

“Wastewater nutrients discharged to land will either be assimilated via plant uptake or percolate through the soil and drain via shallow groundwater to the Pōrangahau River and/or existing watercourses present on the Discharge Property. A small amount may drain through Wetland 1 via groundwater but this is not expected to cause a shift away from existing baseline conditions as the wetland is tidally influenced and already has a naturally variable water table. It is considered unlikely that there will be an ecological shift in the wetland community as the species present are expected to be tolerant of a natural variation in water levels. Soil hydraulic conductivity of the Discharge Property is measured within LEI (2020:P:B.15) to determine a discharge regime to manage drainage and runoff as described in LEI (2021:P:C.15).”

48. *Future activities for constructing the wastewater storage pond, rising main, irrigation system and WWTP will involve earthworks, structures and buildings that also would require assessment of the Freshwater NES. Please provide commentary on how this will be dealt with.*

Response:

All future activities and assessments relating to the construction of the wastewater storage pond, rising main, irrigation system and WWTP will be provided within the next wave of consenting and as designs are refined. These designs will be determined following the outcome of this consenting process.

Ancillary structures, other possible consents & potential contamination

49. *Where will the new pump stations likely be located? Is this on land owned by CHBDC? Would they require odour treatment?*

Response:

The specific locations of pump stations are yet to be confirmed. In both cases, the preference is that the final existing sewer pumpstations (pre ponds) will be modified. Odours and issues are not expected to be any different to that currently experienced.

50. *Will the new wastewater rising main from Te Paerahi to the new land discharge site be attached to the Beach Road Pōrangahau River bridge, a new pipe bridge or run under the Pōrangahau River? Depending on the solution additional consents may be required including new structures over water bodies and dewatering.*

Response:

Details around the design of the pipeline route from Te Paerahi to the Discharge Property over the Pōrangahau River is ongoing. Any required consents are not part of this consenting package.

51. *Please provide a preliminary site investigation (PSI) to cover the project where any earthworks will occur on HAIL sites or further commentary or evidence for why a PSI is not required. Alternatively, a PSI could be deferred to a later date providing it does not cause delays to the committed programme.*

Response:

Construction works have not been designed or determined as of yet, as they are largely dependent on the outcomes of this consenting process. A further wave of consents will be lodged for the construction of the WWTP and storage pond. Any land contamination issues at the existing treatment plants will be dealt with separately to this consenting process.

Natural Hazards & Climate Change

52. *What remediation measures will be taken post-flood to allow the irrigation site to be quickly remediated.*

Response:

The Discharge Property can be managed as per normal flood remediation. LMU 3 is not expected to be impacted by flooding as this is located at a greater elevation than LMU 1 and 2. In the event that LMU 1 and 2 are flooded, irrigation will be entirely to LMU 3.

Remediation will consist of normal paddock remediation, which may include removal of silt, cultivation and resowing.

53. *Provide a map clearly showing which areas will be irrigated that are within the low flood risk zone including the area in hectares.*

Response:

A figure has been prepared showing the low flood risk areas in Annex B. This low flood risk area is defined in the HBRC hazard portal under flood risk areas. From this, approximately 45 ha (excluding buffers) is available classified as low flood risk, however we believe the near the entirety LMU 3 should be classed as low flood risk increasing this land area.

It should be noted that IMU3 areas due to their elevation will not flood. Should there be inundation, IMU3 areas alone will be used.

54. *Comment on the impacts of climate change on flood risk to the site.*

Response:

Climate change is expected to bring more intensive rainfall events resulting in increased flood risk. However, by the same token there may be prolonged dry periods. Within the Pōrangahau area, land that is of relatively flat terrain is all situated in proximity to the Pōrangahau River with everything else being hill country farmland. All properties on the floodplain are at varying degrees of flood risk, with this risk needing to be appropriately managed.

Alternative to a land discharge is the continuation of a river discharge. This is not what the community want, leaving a land discharge regime as the only option, accepting that there are some limitations and noting that as indicated above IMU 3 can be used while flooding occurs.

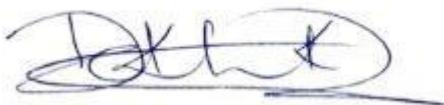
55. *Taking a best practice approach and to mitigate transition risk, please provide a GHG footprint assessment for the whole of life GHG emissions including embodied/capital and operational carbon (i.e. over a 50 year time frame or another suitable time frame) for all options assessed, or as a minimum for the WWTP options for the new land irrigation scheme site. The assessment should be undertaken in accordance with the IPCC Guidelines for National Greenhouse Gas Inventories and relevant best practice guidelines which considers carbon dioxide equivalents (i.e. including methane and nitrous oxide) and all relevant Scope 1, 2 and 3 GHG emissions.*

Response:

CHBDC notes the importance and appropriateness of Green House Gas assessments. However, CHBDC is of the view that Green House Gas assessments are not currently a requirement of wastewater discharge consents.

But do anticipate that these will be considered and may be undertaken through the detailed design.

Yours sincerely,



Darren de Klerk

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Annexures:

Annex A: Beca (2021:P:D.25) - Pōrangahau and Te Paerahi Wastewater - Water Quality Assessment
Annex B: Figures
Annex C: Beca (2021:P:D.66a) - Pōrangahau Wastewater Discharge to Land - Ecology s92 Response