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Dear Sophia

REQUEST FOR FURTHER INFORMATION - TAKAPAU WASTEWATER DISCHARGE APP-126522 – SECOND RESPONSE

Thank you for reviewing the request for further information provided on the 20th August 2021 regarding Central Hawke's Bay District Council's application for resource consent (APP-126522). This letter provides further information to questions/comments based on subsequent questions from a letter dated 8th September 2021.

Question numbers presented in this response are consistent with those outlined in the HBRC letter.

Cultural Impact

2. *Noted and agreed that the site is a 'Site and Area of Significance to Maori' not an archaeological site.*

*Although the CIA address the relevant sites of significance including Wahi tapu and Wahi taonga (section 3.10 – CIA), there is no mention of the identified and mapped 'Site and Area of Significance to Maori 246' in the CIA. **Please provide evidence showing that the author of the CIA is aware of this mapped area on site and that this has been taken into account in the CIA.***

Response:

As you (HBRC) have noted in your response the CIA addresses the relevant sites of significance including Wahi tapu and Wahi taonga. The CIA has been prepared to represent Mana whenua of Takapau. The hapū are Ngāi Tahu makakanui (Tahu ki Takapau), Ngāi Toroiwaho, Ngāi Te Kikiri o te Rangi of Te Rongo a Tahu marae and Ngāi Te Rangitotohu and Ngāti Mārau of Rākautātahi marae. The CIA meets the HBRC and RMA tangata whenua planning policy framework in its entirety. The details within the CIA are not our remit. We do not feel it is appropriate to advise or ask the authors of the CIA to confirm a CHBDC District Plan Site and Area of Significance to Maori 246. It can be taken that all sites of significance to Maori have been incorporated into the CIA.

Should any land use consents be required under the CHBDC District Plan, then confirmation from iwi may be requested, however, the current regional consent being sought is a discharge consent under the HBRC RRMP (not the CHB District Plan) and the relevant tangata whenua policies have been appropriately addressed.

Land Management

3. *All reports have been received.*

Evidence why the proposed option is superior to an irrigation / rapid infiltration system should be provided.

Response:

The process to develop the proposal as it exists has taken on board a number of considerations, including alternatives (treatment, discharge methods and sites), treatment management and discharge management. This includes the opportunity to work in with the land-owner to develop a system they are comfortable operating and ensures a high level of compliance with any conditions imposed.

This process has considered a range of values, primarily those associated with cultural, environmental recreational and financial opportunities. On balance the proposed system has been selected.

Notwithstanding the above, it is acknowledged there are further opportunities to improve outcomes, including higher levels of treatment, farm systems that have higher nutrient removal (cut and carry) and the complete cessation of surface water discharges. These other opportunities, while viable, are not the proposal. Pursuing them may see a change in the application scope, and potentially require a new application. Further, adopting further refinement may come at increased cost whereby the modified system is not financially viable.

The effects of the current proposal are considered overall to be less than minor. There is no need to further refine what is proposed.

4. ***On checking our internal database, it does not appear that FEMPS or application for resource consent have been provided for the two sites for the existing activities being carried out on them.***

Response:

Unfortunately the advisor working on behalf of a number of farms in the wider catchment has not submitted farm plans as he had indicated he was doing. Lodgement of these plans is pending.

5. *In regard to the best practicable option discussed in the Assessment of Environmental Effects (AEE):*
 - a. ***The Overseer modelling indicates that the reduction in nitrogen contribution to the catchment by both direct surface water discharge through the HRLP and leaching is only 10% reduction. While this is an improvement, we consider the reduction in the contribution of nitrogen will not be sufficient to meet the proportional decrease required to help meet the DIN target for the catchment. Whereas the cut and carry regime (described in report T:C.14a) has the potential to provide significantly more nitrogen uptake resulting in significant decrease in leaching.***

The applicant has noted that the cut and carry regime may be considered environmentally better than the proposed business as usual regime. It should be noted that restrictions of the use of the site by the site managers comes lower in the hierarchy of obligations under Te Mana o te Wai than the health of the waterbody.

Response:

The interpretation of the need for reductions in nutrient loads to the Makaretu catchment to satisfy PC6 and meet obligations of Te Mana o te Wai, as suggested, is in our view incorrect.

Adopting a cut and carry system is not the proposal, nor is it needed to satisfy requirements of PC6. The application proposes a system that results in an overall less than minor effect. This is assisted with the removal of the direct discharge of treated wastewater to the Makaretu River, significant reductions in catchment phosphorus loading, and does not adversely impact on the current catchment water quality limits.

We consider that the 10% reduction in DIN loading, being a conservative value assuming that no attenuation occurs through groundwater and not recognising the removal of a point source discharge of DIN, is an overall decrease in mass loads of DIN to the catchment. This decrease is proportional to the scale of effect of the activity that is proposed.

- b. PDP recommend that confirmation that, based on the soil moisture modelling, if additional land area at stage 2 will allow for a greater fraction of the 2048 flows to be irrigated. This is likely to inform the Council's s42a report on alternatives.*

Application documents state that a non-deficit regime will be adopted, but s92 says non-deficit regime is considered unnecessary and may have a detrimental impact on the farm management system. Confirmation required of how the irrigation will be managed.

Response:

Non-deficit irrigation spans a continuum of loading from applications that slightly exceed field capacity to those that are likened to rapid infiltration. The proposal is a slight exceedance of field capacity, as set out in 1) Main AEE (CHBDC, 2021:T:D.1), 2) Land AEE (LEI, 2021:T:D.10) and 3) Conceptual Design (LEI, 2021:T:C.15).

Management of Farm Activities

7. *This satisfies HBRCs information request.*

We have concerns of the potential risk of irrigating land which is not owned by CHBDC in the case of future ownership changes etc. CHBDC have not shared the information of the ownership. It is noted that the applicant does not need to own land to apply for resource consent, or for resource consent to be granted. However, should future land ownership result in changes to the agreement, this will need to be recognised as a variation to the consent, if granted, or a new consent.

Response:

The concerns expressed are unfounded and in fact not support by recent Environment Court proceedings.

8. *It is noted a condition has been offered for production of an Operational and Management Plan (Condition 47). This specifies several methodologies required for the operation of the discharge infrastructure. To understand the potential effects of the activity, some further information is required on how the site will be operated between the lessee / lessor (Drummond), lessor (Dalby) and Central Hawke's Bay District Council.*
- e. Please provide reference or explanation for the basis of the parameters that have been proposed for this condition.***

Response:

The use of a 12 m/s windspeed cut off has been adopted from the hearing evidence of Dr Andrew Hewitt for the combined Wairarapa District Plan, supporting reports and subsequent District Plan rule. This value is well supported by the analysis of aerosol studies provided by Dr Hewitt. Consideration of the potential for pathogen travel in aerosols has been taken from Dr Andrea Donnison's work in Canterbury. Species of pathogens considered in studies of aerosols are typically those associated with skin conditions and respiratory disease.

A 4 m/s cut off is proposed for some wind directions. This value has been adopted as for other similar discharges. While not absolutely necessary, in our experience, at this wind speed neighbours feel more comfortable that irrigation is stopped and an extra degree of safety is applied.

- f. Please provide reference or explanation for the basis of this 24 hour stand down being appropriate for application of human derived wastewater to pasture.***

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.

Effluent Treatment and Discharge

- 11. No work, links to specific reports or details have been provided to support the statement from the applicant. Please provide additional evidence to support this statement.***

Response:

The focus of the application is the discharge of wastewater from the treatment plant. The assessment accompanying the application considers wastewater quality discharging from this treatment plant and via the proposed discharge regime. The proposed discharge provides for an overall conclusion of effects being less than minor, the aspect that informs the granting of consent.

There are a multitude of treatment options and configurations, which could change over time as technology evolves. Despite possible changes, the aspect that must remain consistent over the term of consent is effluent quality. We are of the view that no further details regarding the treatment plant needs to be provided.

14. *This satisfies HBRCs information request.*

It should be noted that PDP have recommended that the applicant should undertake soil moisture modelling and confirm whether additional land area at Stage 1 will allow for a greater fraction to be irrigated. This is likely to inform the Council's s42a report on alternatives.

Response:

Despite being highlighted by PDP as an action which 'should' be undertaken, no request for clarification has been made. Therefore, no information has been provided. It is expected that PDP would not have undertaken this modelling as this adds to costs.

17. *It is stated that throughout the application that UV disinfection will be installed for flows from the treatment pond and that additional filtration is proposed. During the 21/05/2021 site visit, the applicant's consultant, LEI, discussed that the proposed location of the UV was still being worked through to provide for the most practical and cost-efficient location in the system. Please provide information on the following:*

- a. *Typically, a UV disinfection system would be expected to achieve greater than a 1 log reduction in faecal coliforms and E. Coli. **Please provide further comment on the performance of the UV system.***

Response:

The UV system is proposed for land management purposes to contribute to a reduction in pathogens being irrigated and landing on crops. No specific target standard is proposed or warranted.

Similarly, UV disinfection prior to the HRLP is not considered essential as the discharge will occur during high flow and at times when contact recreation is not likely.

Despite the above, it is proposed that the UV system will achieve at least a 1 log reduction on current discharge standards.

18. *Further information has been provided, it is agreed significantly greater attenuation could occur with irrigation rather than direct discharge reducing the effects on the river.*

However, given there is still a percentage of effluent proposed to be discharged to the river, assessment has not taken into account any risk to public health of downstream river users from microbial pathogens (recreation / registered drinking water suppliers) from the discharge into the river from the HRLP has not been provided.

Given that the applicant are a downstream registered water supply owner (Takapau Road Bore – Well numbers 15107, 5617, 5676, 16892 and well no. 16893) the risk to these bores including consideration of any measures required for failures at the Takapau discharge site (e.g. pond embankment failure) should be considered. A consideration of the impacts on other downstream water supplies on the potentially affected rivers between the site and the coast should also be provided (including non-registered suppliers). Consideration of effects on contact recreation (including swimming sites) is also required. The risk assessment may need to be informed using a Quantitative Microbial Risk Assessment (QMRA).

Response:

The proposed discharge to the Makaretu River will occur, at a worst case scenario at Stage 2, when the river is above median flow. Table 29 of document T:D.25 shows that when modelled compared to historic weather patterns, the proposed discharge, at worst, would only occur between the months of June to August. Using 2019 climate records, the discharge would not have occurred at all and in 2016 only 156 m³ of treated wastewater would have been discharged during the entire year.

Table 30 of T:D.25 predicts that, at a time when the discharge is occurring, the downstream concentration of E. coli would increase by 2 %, from 140 cfu/100mL to 143 cfu/100mL. This is a negligible increase in E. coli concentrations.

Additionally, it is proposed that UV disinfection treatment will occur to all discharged flows including those discharged to the HRLP.

For a large part of the time, and at all times below median river, the discharge to the river will cease. This will have a measurable positive public health effects compared to the existing continuous treated wastewater discharge that does not receive UV disinfection.

When the discharge does occur, through a combination of UV disinfection and a high-level of dilution (calculated as a minimum 2,260 fold dilution), increases in downstream E. coli concentrations will be negligible. Effects on downstream public water supplies and contact recreation are therefore also considered to be negligible.

Surface Water

20. On the basis of the information provided and a review of the local groundwater reports, we consider that at a wider scale, the direction of groundwater flow is likely to be towards the Porangahau Stream, although there is some uncertainty.

We consider that the applicant should therefore provide an assessment of impacts on the Porangahau Stream or other down gradient waterways expected to be the ultimate receiving environment for the discharge.

Response:

Our work shows the groundwater flows north-east sub-parallel to the Makaretu River and ultimately that groundwater would flow downgradient towards gaining stretches of downstream waterways.

Whilst it is possible that a component of groundwater flow could travel in the far-field towards the Porangahau Stream catchment, determining effects over such a distance downgradient would be difficult to ascertain with any accuracy given the number of inputs (both land use and point source) between the proposed discharge location to land and the Porangahau Stream.

We consider that on a sub-regional scale, the most appropriate location to consider downgradient effects is at the Tukituki at Tapairu site (representative of Management Zone 3). This site is downstream of both the Makaretu and Porangahau Catchments.

We note that the HBRC Tukituki dashboard¹ shows that sub-catchment T6 'Makaretu' has a DIN five year average of 0.55 mg/L (green light below the target of 0.8 mg/L).

21. Please provide a reference, we have spoken to our hydrologists to verify this.

Response:

There is not long-term reliable data for the Makaretu River. The Tukituki River site at Tapairu Road has longer term and more reliable data and is also used as a point where nutrient limits are applied. There is no other alternative data and it is expected these sites are sufficiently suitable given the limitations of the existing data sets.

23. An assessment that a 20m setback is sufficient to protect the Makaretu River from any detrimental effects of the discharge has not been provided.

Response:

It is unclear why an assessment of 20 m is required when a 20 m separation to waterways is common. Further, the soils in the area are very free draining alluvial gravels and surface flow is highly unlikely. Further, should there be a discharge it is most likely to be during extremely wet conditions when the river is likely to be in flow and would have a low sensitivity to any discharge.

24. Please provide justification from the ecologist that 'Site 2' and 'Site 3' are distinctly separate sites.

Please confirm whether the areas of 'Site 2' and 'Site 3' meet the definition of a 'natural wetland' under the National Policy Statement for Freshwater Management (NPS-F), 2020.

The ecologist report identifies that 'Site 2' as an ephemeral wetland, if either 'Site 2' or 'Site 3' meet the definition of a 'natural wetland' under the NPS-F, consent may be required for the discharge of water within 100m of the wetland. Please provide an assessment against the provisions of the NPS-F and identify what activity status the discharge of treated wastewater within 100m of a natural wetland will have. Although it is acknowledged that the ecological appraisal identified.

Response:

Beca ecologists have confirmed that site 2 and 3 are separate sites and that they do not meet the definition of a natural wetland under the NPS-FM.

Groundwater

25. There is potential for bores to exist in the rural residential properties to the south of the site (along Charlotte Street and Nancy Street), an assessment of the potential risk of discharging wastewater in close proximity to these bores should be made.

It is noted that the CHBDC reticulated water supply extends and may serve these properties, please comment on whether the properties closest to the proposed discharge are connected to the reticulated system.

¹ [Tukituki Dashboard | Hawke's Bay Regional Council \(hbrc.govt.nz\)](https://www.hbrc.govt.nz/tukituki-dashboard)

Response:

The CHBDC water supply system extends to properties along Charlotte and Nancy Streets up to SH2 and can be accessed here. Water connection meters are shown for each property and there are no known bores along Nancy or Charlotte Streets used for potable water supply. Two bores are noted along Charlotte Street (3594 & 16931) which are used for stock use, as well as another bore (5987) along Oruawharo Road used as a drinking water supply, located 300 m and 600 m from the Discharge Property respectively.

Although there is potential for future groundwater bores to be installed along Nancy and Charlotte Streets, these will be sufficient distance from the Discharge Property by which the risk of contaminants in groundwater from the Property affecting these bores is expected to be less than minor.

Ecology

27. As per point 20, please provide some assessment of effects on the ultimate receiving bodies specific to the proposed design.

Response:

Note the response to question 20.

We consider that on a sub-regional scale, the most appropriate location to consider downgradient effects is at the Tukituki at Tapairu site (representative of Management Zone 3). This site is downstream of both the Makaretu and Porangahau Catchments.

29. As per point 23, above, further information is required as to whether the drainage channel and ephemeral wetland are classified as a 'natural wetland' under the NPS-F and, if so, may require consent under the NES-F.

Response:

Beca ecologists have confirmed that sites 2 and 3 do not meet the definition of a natural wetland under the NPS-FM.

Natural Hazards

33. Please confirm that the HRLP will be designed to discharge treated wastewater while flooded in the event conditions for irrigation have not been met and the storage is full.

Response:

Yes

We look forward to the application being notified.

Yours sincerely,



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