

MEMORANDUM

Job 10684

To: Hilary Lough & Oliver Hunt (Pattle Delamore Partners)
From: Hamish Lowe & Sam Morris (Lowe Environmental Impact)
Date: 6th December 2022
Subject: Pōrangahau/Te Paerahi Land Discharge Consent – Helminth Condition Response

This memo has been prepared following a technical meeting held on the 1st of December 2022 between Central Hawke’s Bay District Council (CHBDC) and Hawke’s Bay Regional Council (HBRC) associated with the consent conditions to enable land application of Pōrangahau and Te Paerahi’s wastewater. Specifically, this memo has been prepared in relation to Condition 70 (version 8 conditions) relating to the management and monitoring of helminths within wastewater irrigated to the Discharge Property.

BACKGROUND

As part of the consenting process, consent conditions are currently being developed between CHBDC and HBRC. Prior to the 1st of December 2022 technical meeting, CHBDC prepared and circulated a response and a further marked consent conditions (effectively becoming version 9 conditions). This technical meeting was then held to discuss these version 9 conditions and CHBDC’s changes.

One of the outstanding consent conditions is Condition 70, being the management and of helminths. The project involves the establishment of a Biological Trickling Filter (BTF) wastewater treatment plant, which differs from a traditional pond-based wastewater system which have longer retention times that can adequately reduce helminth numbers to minimise risk. BTF (and other high rate treatment systems) have shorter retention times, and there is less information to demonstrate their effectiveness of removing helminths.

Concerns from HBRC’s technical team is that should a BTF plant not remove helminths adequately, then there is a risk for irrigation to result in a greater transmission to farmland where stock can potentially ingest helminths. Once ingested, the helminth ova could incubate and develop in the animals, which when slaughtered could have potential to enter the human food chain.

To adequately manage helminths, PDP proposed the below consent condition based on the Victorian EPA Guidelines for Water Recycling (2021). This consent condition is as follows:

If cattle are to consume pasture or fodder crops irrigated by treated wastewater the consent holder must ensure one of the following control measures are in place:

- (a) A 2 year withholding period occurs between wastewater irrigation and consumption.*
- (b) A wastewater treatment process or combination of processes which provides a minimum of 4 log removal for helminths*



A response from CHBDC on this consent condition was provided to which should be referred to and will not be repeated within this memo.

DISCUSSION

As part of the technical discussion, it was noted that CHBDC would develop a plan to better manage helminths that could be used as a consent condition as the consent condition proposed by PDP could not be accepted in its current state.

LEI staff have further investigated how the management of helminths from a BTF WWTP could be undertaken to alleviate some of PDP concerns. The following sets out a plan/options.

- In the first instance, CHBDC propose testing helminth ova within the sludge samples produced from the WWTP rather than the wastewater itself. The WWTP is expected to remove a large proportion of helminths from the water fraction that will evidently end up in the WWTP sludge. CHBDC believe it to be better suited to test the sludge as this is more likely to contain greater quantities of helminths than the wastewater.

As a side note, the laboratory has indicated that sludge sampling would be much easier and a more practical option than the wastewater itself. CHBDC propose that to manage helminths, wastewater sludge from the WWTP is sampled biannually.

- In addition to sludge sampling and relating to on farm management, CHBDC propose that the landowner undertakes regular inspections and observations around stock health and to test for worms if and when needed as directed by veterinary advice. In the event that worms are suspected or observed, then stool samples are to be taken from stock. Upon the receipt of results, an appropriate parasite control programme shall be implemented, with veterinary support as needed.

It is acknowledged that stock may be asymptomatic for helminths, therefore there may not be any indication of stock being infected until slaughter. However, assessing animal welfare should be included as part of the overall management of helminths.

- To further expand on CHBDC's response to Condition 70 within version 9 conditions, CHBDC propose that once the combined WWTP at the Discharge Property is established and operational, monthly wastewater sludge samples are collected over a period of six months to build a baseline of helminth monitoring data. This monitoring data can then be used to set critical limits over which any future wastewater sludge samples for helminths invokes a notification process. Notification would be to both the Hawke's Bay District Health Board (HBDHB) and the Ministry for Primary Industries (MPI).

This approach is considered appropriate to managing helminths across the Discharge Property and is similar to a number of other approaches to managing disease within livestock across New Zealand, such as *Mycoplasma Bovis*, Foot and Mouth and Mad Cow Disease. What will need to be established is a response protocol, being something



that can be set out and included in the Management plan. Key aspects to include in the conditions, and ultimately the Management Plan, are:

- Sampling and analytical process;
- Method and process to set a baseline;
- Establishment of two status threshold, first being a 'watch status' and second 'movement control status';
- Who and how notification occurs; and
- Response procedures.

CONSENT CONDITION WORDING

CHBDC propose the following four consent conditions for managing helminths:

Condition 1:

The Consent Holder shall from the commissioning of the new WWTP at the Discharge Property:

- a) take bi-monthly wastewater sludge samples over a year long period and have them analysed for helminth ova for the purposes of developing a baseline dataset; and*
- b) following the completion of (a), take bi-annual wastewater sludge samples for the consent duration to be analysed for helminth ova for the purposes of regular monitoring and WWTP performance.*

Condition 2:

Subject to the completion of Condition X (a), the Consent Holder shall within 6 months, in collaboration with the Hawke's Bay District Health Board (HBDHB) and the Ministry for Primary Industries (MPI), develop two critical limits for helminth ova within wastewater. These limits shall reflect:

- a) A limit the Consent Holder shall notify and then discuss and develop an agreed approach to managing helminths; and*
- b) In addition to the requirements of a), a higher limit that requires immediate movement control of stock on and off the Discharge Property.*

Condition 3:

For the purposes of managing helminths, the Consent Holder shall;

- a) require the farm manager to observe stock condition and test for worms as needed or in accordance with veterinary advice.*
- b) If worms are suspected, or observed, then stool samples are to be taken from a representative sample of stock. Following return of the worm count results, in collaboration with veterinary advice an appropriate parasite control programme implemented.*

Condition 23 – Operation and Management Plan:

Add a (v) to Condition 23 that requires:

(v) A protocol and management requirements for managing sampling and notification of high helminth ova counts, including:

- (i) Sampling and analytical processes;*
- (ii) Method and process to set a baseline ova counts;*



(iii) Establishment of two status threshold, first being a 'watch status' and second 'movement control status'.

(iv) Who and how notification occurs;

(v) Response procedures; and

(vi) Farm management and responses practices to monitoring helminth ova.

Advice Note: (iii), (iv) and (v) may require baseline sampling to have been completed

If you have any questions, please do not hesitate to get in contact.

Yours sincerely,

Low Environmental Impact

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