

Evidence in respect of Genesis Energy Limited Submission #74052; Table 3.11-1

BEFORE THE INDEPENDENT HEARINGS PANEL FOR PROPOSED WAIKATO
REGIONAL PLAN CHANGE 1

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF Joint Witness Statement Regarding Changes to Table 3.11-1

EVIDENCE BY RICHARD MATTHEWS

12 JULY 2019

FOR GENESIS ENERGY LIMITED SUBMITTER #74052

Evidence Summary

1. I consider that any changes to the attributes in Table 3.11-1 must be supported by a further evaluation undertaken in accordance with s32AA of the Resource Management Act.
2. I have set out information that would inform a s32AA analysis but have not undertaken what I consider would be required for a full s32AA analysis.
3. In my opinion, it would be difficult for a full s32AA analysis to support the inclusion of temperature and other toxicant attributes in Table 3.11-1.
4. For temperature, it is not apparent that the inclusion of a temperature attribute would be appropriate or necessary for meeting the overarching objective of Plan Change 1 (restoring the water quality of the Waikato and Waipā Rivers such that they are safe for people to swim in and take food from).
5. There are environmental benefits from controlling and managing temperature and other toxicants. However, these are already controlled through rules in the Regional Plan (including by permitted activity standards or through resource consent processes) or in my opinion are unlikely to arise as a result of diffuse discharges. I consider it unclear and uncertain what the additional benefits, costs or implications of including these as attributes in Table 3.11-1 would be over retaining the status quo controls and provisions in the Regional Plan.
6. The economic costs of including additional attributes could be significant, including to the whole of New Zealand. The economic and social benefits and / or costs of including temperature and other toxicant attributes in Table 3.11-1 relative to the status quo are difficult to identify or quantify but could be significant and have not been fully assessed.
7. The economic costs could include businesses needing to stop or reduce operating over the summer months when ambient temperatures are elevated, restricting or preventing discharges. As an example, generation at the Huntly Power Station would potentially be severely limited throughout summer months, when thermal generation provides essential electricity supply for New Zealand when other electricity generation may be constrained, as was experienced over the recent (2018 – 2019) summer period.

8. From an efficiency and effectiveness perspective, I can see no compelling reason why temperature and toxicant limits in Table 3.11-1 would be an efficient and effective means of achieving the plan change objective (which is to ensure the water quality of the Waikato and Waipā Rivers is safe to swim and gather food from).
9. I have assessed the risk of not acting (i.e. not including temperature and other toxicant attributes in Table 3.11-1) as being low because point source discharges of temperature and toxicants in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality are already controlled through the resource consent process and are fully assessed on an activity / discharge / site specific basis.
10. Plan Change 1 does not, nor does any of the evidence that I have read, provide the strategies or mechanisms to control temperature or other toxicants, aside from being a matter to consider in the resource consent process for point source discharges.
11. I do not consider that a full and proper s32AA further assessment has been carried out to justify the inclusion of temperature and other toxicant attributes in Table 3.11-1, nor is there any policy basis for including these as attributes in Table 3.11-1. I am not aware of any s32AA analysis supporting additional objectives and policies that justify the inclusion of temperature and toxicant attribute states in Table 3.11-1.
12. I do not consider that the PC1 policy framework supports additions to the attributes in Table 3.11-1.

Introduction

13. My name is Richard John Matthews.
14. I presented evidence on behalf of Genesis Energy Limited (**Genesis**) for the Part A and Part B Block 1 hearing and the Part C1 - C6 Block 2 hearing considering Proposed Plan Change 1 - Waikato and Waipā River Catchments (PC1).
15. My qualifications and experience are as set out in my evidence for the Parts A, B and C1 - C6 hearings for PC1.

Code of Conduct

16. While not directly applicable to this hearing, I confirm that I have read the “Code of Conduct for Expert Witnesses” contained in the Environment Court Consolidated Practice Note 2014. I agree to comply with this Code of Conduct. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope of Evidence

17. This statement of planning evidence is specifically in relation to the implications of the Joint Witness Statement on Table 3.11-1 and the suggested changes to Table 3.11-1.

Genesis Energy Limited Background and Submissions

18. Section 2 of the Genesis submission sets out the background to Genesis’ interests in the Waikato River catchment. Genesis Energy owns and operates the Tongariro Power Scheme and the Huntly Power Station (**HPS**) in the Waikato Region. The HPS has a thermal discharge to the Waikato River meaning that temperature in the mainstem of the Waikato River is of significant interest to Genesis. Onsite processes at the HPS also result in some discharges of ammonia, phosphorus and sediment to the Waikato River which are included in PC1. These discharges are all managed through a comprehensive suite of resource consents.

Joint Witness Statement

19. I have reviewed the Joint Witness Statement (**JWS**) from the expert witness conferencing on Table 3.11-1.
20. It is unclear from the JWS what specific changes to Table 3.11-1 are being proposed by the expert witnesses. As such it is difficult to determine what the implications of the JWS are.
21. Particularly, there does not appear to be any specific outcome or consensus reached in relation to temperature and other toxicant attributes. In my opinion, the JWS re-states the positions held by the various experts prior to the caucusing and as expressed in their respective evidence statements to date.
22. With respect to temperature, I note that there was no agreement or consensus with respect to including temperature as an attribute in Table 3.11-1¹ and some agreement (at least 5 witnesses) with not including temperature as an attribute.²
23. With respect to other toxicants, Table 2 of the JWS records mixed agreement / disagreement for an “other toxicant” attribute in PC1, based on the assessment in Attachment 16 of the JWS.

Temperature Attribute for PC1 – Adam Daniel (Attachment 14)

24. In the JWS Attachment 14 memorandum on a Water Temperature Attribute for PC1, Dr Daniel notes that it would be sensible to include the “existing limit” of 20°C from the Waikato Regional Plan 3.2.3 Policy 7 (Fishery Class) and 3.2.4.5(b) Implementation Method for Significant Trout Fisheries and Trout Habitat.
25. Dr Daniel is also proposing attribute bands that “could be defined by percentage days the maximum temperature exceeds 20°C”.

¹ As recorded in Table 2, page 14 of the JWS with respect to Attachment 14 (prepared by A Daniel) of the JWS.

² As recorded in Table 2, page 14 of the JWS with respect to Attachment 15 (prepared by T Cox) of the JWS.

26. The rationale for the proposed 20°C limit and attribute bands is unclear, aside from rolling over an existing standard in the plan to become an attribute of PC1. Imposing a strict limit of 20°C would result in generation at the HPS being severely limited in operation for most of the summer months as the natural ambient temperature upstream of the HPS regularly exceeds 20°C meaning that there would be no capacity for additional discharges of heat to the river.
27. As described in section 3.2.4.1 of the Regional Plan, the Implementation Methods in section 3.2.4 are “standards” for the purposes of permitted activities but “guidelines” for any resource consenting process. That is, for resource consenting processes those standards are matters to which regard must be had, rather than strict limits that must be met. In Dr Daniel’s paper there is no clear rationale for extending this standard to be a strict limit that applies across the main stem of the Waikato River.
28. In particular, I note that there is no analysis of what the implications of such a strict limit would be for activities other than trout fishing in the Waikato River, or of the implications of existing natural ambient water temperatures on trout where these exceed the suggested 20°C limit. No information is provided as to the contribution of point or diffuse source discharges to ambient temperatures in the Waikato River. My understanding is that diffuse discharges have little effect on the river temperature, while point source discharges are controlled through resource consent conditions.³ Factors such as solar incidence and open reaches of water typically have more influence on temperatures in the main stem of the Waikato River than diffuse or point source discharges.
29. I consider that further technical work would need to be undertaken (or presented) justifying any temperature attribute for the mainstem of the Waikato River, particularly in the Lower Waikato River which is wide and shallow with more elevated temperatures naturally than smaller waterbodies. Any attribute would need to recognise the natural factors influencing the temperature of waterbodies.

³ For example, conditions 5(a) – (k), 8, 9 and 10 in HPS Resource Consent AUTH123643.01.05 directly relate to temperature controls, while other conditions in the consent address matter related to potential temperature effects.

30. In that regard, I consider that the existing framework is appropriate, whereby resource consents are required for discharges that may affect receiving environment temperatures and any temperature effects of the discharge can be assessed on a site-specific technical basis (irrespective of whether it is an attribute of PC1). Conditions of consent can adequately control the temperature and temperature related effects of discharges, as has been demonstrated by consent granted for temperature related discharges (such as the HPS cooling water discharge) in the Waikato Region.
31. To illustrate the typical Lower Waikato River temperature over time, the average daily maximum ambient temperature in the Lower Waikato River at the Huntly Rail Bridge upstream of the HPS is presented graphically in Figure 1. This figure shows that the average daily maximum river temperature upstream of the HPS naturally exceeded 20°C between early December and early April during the period 2011 and 2018.

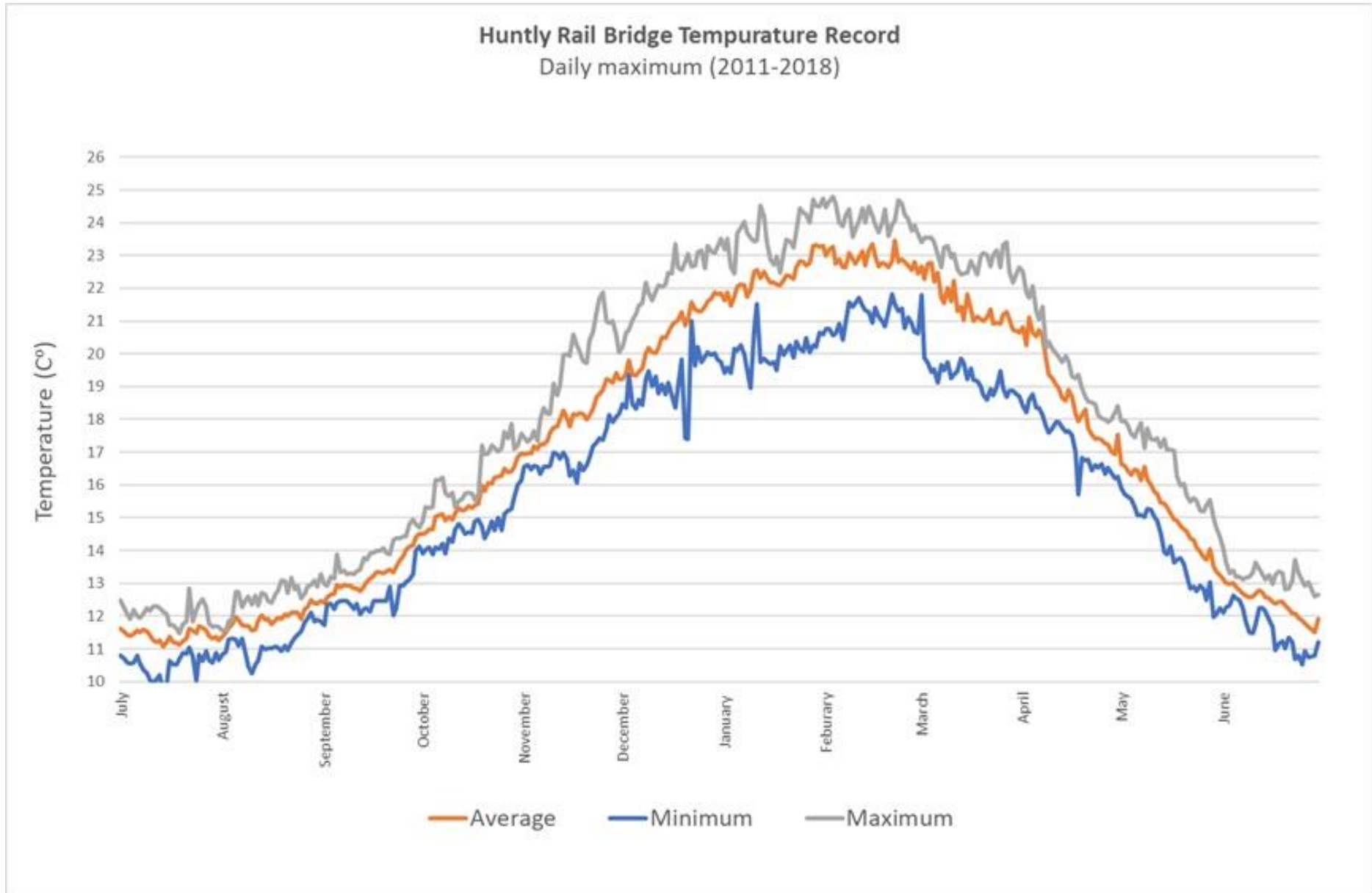


Figure 1: Average daily maximum ambient Waikato River temperature at the Huntly Rail Bridge

Section 32AA of the RMA

32. While it is not clear as to what changes to Table 3.11-1 are proposed in respect of temperature and other toxicant attributes (being the key attributes of note to Genesis), I consider that any change to Table 3.11-1 needs to be supported by a s32AA further evaluation.
33. For any proposed Regional Plan, an evaluation report for the proposed plan is to be prepared in accordance with s32 of the Resource Management Act (**RMA**). The evaluation report required must examine whether the provisions in the proposal are the most appropriate way to achieve the proposed objectives.
34. Section 32AA of the RMA requires a further evaluation to be undertaken for any changes proposed since the original evaluation report was completed. The s32AA further evaluation:
- a) Is only required for changes that were not assessed in the original s32 evaluation report [s32AA(1)(a)];
 - b) Must be undertaken in accordance with s.32(1) to (4) (which I have set out in full in Appendix 1) [s32AA(1)(b)]; and
 - c) Must be undertaken at a level that corresponds to the scale and significance of the changes [s32AA(1)(c)].
35. The inclusion of temperature and other toxicants as attributes or values in Table 3.11-1 was not explicitly considered as part of the original s32 evaluation for PC1.
36. In my opinion, the evidence presented to date in either the evidence-in-chief or in the JWS does not provide a complete s32AA assessment of proposed changes to Table 3.11-1.
37. While it is not clear what changes are proposed in respect of Table 3.11-1 throughout the Joint Witness Statement, changes have been proposed by various witnesses involved in expert witness caucusing. However, no further evaluation report is available at the present time to assess:

- (a) Whether the proposals for any revised Table 3.11-1 attributes are the most appropriate way to achieve the objectives of PC1 [s32(1)(a)];
 - (b) Whether there are other reasonably practicable options for achieving the objectives of PC1 [s32(1)(b)(i)];
 - (c) What the efficiency and effectiveness of those provisions in achieving the objectives of PC1 would be [s32(1)(b)(ii)];
 - (d) The benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposed changes, including any opportunities for economic growth that are anticipated to be provided or reduced and any employment anticipated to be provided or reduced [s32(2)(a)]; and
 - (e) The risks of acting or not acting if there is uncertain or insufficient information about the proposed changes [s32(2)(c)].
38. While the evidence from the various parties proposing changes to Table 3.11-1 focuses on reasons why the changes sought are ecologically appropriate, little information or detail has been provided to date about the scale and significance of the environmental, economic, social, and cultural effects, costs or benefits that could be anticipated from implementation of the proposed changes.
39. In the absence of such an evaluation report, and putting aside the issue of the scope of PC1 and whether a number of the “additional attributes” are in scope, I set out in Table 1, information that in my opinion would be relevant to preparation of a s32AA further evaluation of possible changes to Table 3.11-1, specifically in relation to temperature and other toxicant attributes.

Table 1. Information relevant to a s.32AA Analysis.

CONTAMINANT		
	Including Temperature in Table 3.11-1	Including Other Toxicants / Metals in Table 3.11-1
Appropriate for PC1 Objective	<p>The purpose of PC1 is to restore the water quality of the Waikato and Waipā Rivers so that they are “safe for people to swim in and take food from over its entire length” (Chapter 3.11 Background and Explanation). The Chapter 3.11 explanation states that one objective (Objective K) from the Vision and Strategy has been given particular focus for the proposed chapter. The objectives, policies and rules in Chapter 3.11 of the Waikato Regional Plan (which is what PC1 creates) must therefore address that focus.</p> <p>The Background and Explanation section of PC1 states that “current water quality monitoring results show that while there is variability across the Waikato and Waipā River catchments, there are adverse effects on water bodies associated with discharges of nitrogen, phosphorus, sediment and microbial pathogens” and that from a quality perspective, over allocation has occurred.</p> <p>In my opinion, the focussed management of nitrogen, phosphorus, sediment and microbial pathogens is an efficient way to achieve the PC1 objective given that the monitoring has shown that there are adverse effects associated with discharges of nitrogen, phosphorus, sediment and microbial pathogens.</p> <p>In particular, PC1 was promulgated with a particular focus on diffuse discharge management. Temperature is not typically associated with diffuse discharges, so the management of this parameters is not a particularly effective means to manage diffuse discharges. Therefore, a limit in Table 3.11-1 is not necessarily an effective way to control such discharges.</p>	<p>The purpose of PC1 is to restore the water quality of the Waikato and Waipā Rivers so that it is “safe for people to swim in and take food from over its entire length” (Chapter 3.11 Background and Explanation). The Chapter 3.11 explanation states that one objective (Objective K) from the Vision and Strategy has been given particular focus for the proposed chapter. The objectives, policies and rules in Chapter 3.11 of the Waikato Regional Plan (which is what PC1 creates) must therefore address that focus.</p> <p>The ANZECC guidelines⁴ (as referred to in the JWS) provide guideline values for many parameters including the “other toxicants” proposed by some parties for inclusion in Table 3.11-1. Some of these in high concentrations could affect the ability to achieve the plan change objective. However, the proposed amendments to Table 3.11-1 do not list those specific parameters – just reference to the guidelines meaning that PC1 would define limits based on all ANZ guideline values. Some of these values will not be relevant to achieving the objective of PC1, and there would be unintended consequences of including them. In addition, as noted in Attachment 15 of the JWS, the ANZ guidelines are structured around “trigger values” which trigger further evaluation of risk if exceeded (rather than “standards”) and are not consistent with the “attribute state” description in Table 3.11-1 as different limits may be applicable in different locations.</p>
Benefits	<p><u>Environmental Benefits</u></p> <p>The environmental benefits have been presented in evidence throughout the PC1 process and include protection for trout (particularly in the context of tributaries).</p>	<p><u>Environmental Benefits</u></p> <p>The environmental benefits have been presented in evidence throughout the PC1 process. However, I note that an assessment of the effects of discharging these types of contaminants occurs through resource consent process (it is not that</p>

⁴ Now referred to as the “Australian and New Zealand guidelines for fresh and marine water quality” or “ANZ guidelines”.

CONTAMINANT		
	Including Temperature in Table 3.11-1	Including Other Toxicants / Metals in Table 3.11-1
	<p>However, information on the WRC website states that for native fish the temperature should be a maximum of 25°C degrees rather than 20°C as other parties have suggested for inclusion in Table 3.11-1.</p> <p>While there are benefits of controlling temperature, I note that temperature is already controlled in the Regional Plan (i.e. through the requirement to obtain resource consent for point source discharges, and 3.2.4 Implementation Methods in relation to water management classes with temperature standards). An assessment of the effects of discharging temperature occurs through resource consent process (it is not that they are not controlled / assessed already).</p> <p>It is unclear what additional environmental benefits there would be from having a temperature attribute when these discharges are already controlled through the application of water management standards in the Waikato Regional Plan and through the resource consent process.</p> <p><u>Economic Benefits</u></p> <p>None identified.</p> <p><u>Social Benefits</u></p> <p>No social benefits of including temperature in Table 3.11-1 relative to the status quo (assessment through the resource consent process).</p> <p><u>Cultural Benefits</u></p> <p>This is a matter for tangata whenua to confirm (including those benefits).</p>	<p>they are not controlled / assessed already) typically using or with reference to the trigger values provided in the ANZ guidelines.</p> <p>It is emphasised that the ANZ values are intended to be guideline values and trigger the need for further assessment if a guideline value cannot be met to identify the relevant limit for a given situation or discharge.</p> <p>It is unclear what additional environmental benefits there would be from having a toxicant / ANZ guideline attribute when these discharges are already controlled using an assessment of the ANZ guidelines being a requirement of a resource consent process.</p> <p><u>Economic Benefits</u></p> <p>None identified.</p> <p><u>Social Benefits</u></p> <p>No social benefits of including other toxicants in Table 3.11-1 relative to the status quo (assessment through the resource consent process).</p> <p><u>Cultural Benefits</u></p> <p>This is a matter for tangata whenua to confirm (including those benefits).</p>
Costs	<p><u>Environmental Costs</u></p> <p>None identified relative to the status quo.</p> <p><u>Economic Costs</u></p> <p>Potentially significant, and further work needs to be undertaken to quantify.</p>	<p><u>Environmental Costs</u></p> <p>None identified relative to the status quo.</p> <p><u>Economic Costs</u></p> <p>Potentially significant costs (but would need to be quantified) if a discharge cannot be re-consented (or consented) due to an exceedance of an ANZ guideline value set as a standard in Table 3.11-1 where the guideline value is not</p>

CONTAMINANT	
Including Temperature in Table 3.11-1	Including Other Toxicants / Metals in Table 3.11-1
<p>Following is an example showing the scale of the economic costs for constraining one activity (in this instance, the HPS) if a temperature attribute of 20°C was included as a “bottom line”.</p> <p>The Waikato River at Huntly upstream of the HPS rises above 20°C from about early-December to the end of March (2001 – 2009 data). This is the ambient temperature upstream of the HPS discharge. A Table 3.11-1 temperature attribute with a limit of 20°C would imply that the conditions of the HPS consent should be reviewed to comply with that temperature attribute. The Council could review the existing consent conditions so that the HPS cooling water discharge does not make any current exceedance of a 20°C limit worse than would otherwise be the case in the absence of the HPS. This would effectively mean that generation at the HPS would be severely limited during at least December through March. Throughout summer months this thermal generation provides an essential electricity generation supply for New Zealand when other electricity generation may be constrained, as was experienced over the recent (2018–2019) summer period. The cost of this would be significant and would have national implications in terms of security electricity generation supply / demand, especially as demand increases.</p> <p>A similar constraint could apply to other cooling water discharges to the Waikato River – for example, at Te Rapa the river temperature similarly exceeds 20°C from early-December to the end of March⁵ and a river temperature limit of 20°C could severely constrain or prevent cooling water discharges during that period which could result in a significant constraint to production at the site.</p> <p>There would also be implications for activity that has a thermal discharge to a smaller tributary stream. For example, the Te Awamutu dairy plant discharges cooling water into the Mangapiko Stream where the upstream temperature exceeds 20 °C during the December – March period.⁶ A stream temperature limit of 20°C</p>	<p>the appropriate environmental limit for the specific location and receiving environment.</p> <p><u>Social Costs</u></p> <p>Inability to consent discharges of other toxicants, onerous consent conditions, potential flow on effects in terms of less employment if businesses must reduce capacity / operations.</p> <p><u>Cultural Costs</u></p> <p>None identified – this aspect would need to be informed by tangata whenua.</p>

⁵ Data from Fonterra Te Rapa: Assessment of Effects from the Discharge of Treated Wastewater and Stormwater on the Water Quality and Ecology of the Waikato River, December 2016 – submitted as part of the Fonterra Te Rapa application for consent to discharge to the Waikato River.

⁶ Data from Fonterra Te Awamutu: Assessment of Effects of its Discharges on the Water Quality and Ecology of the Mangapiko Stream, December 2016 – submitted as part of the Fonterra Te Awamutu application for consent to discharge to the Mangapiko Stream.

CONTAMINANT		
	Including Temperature in Table 3.11-1	Including Other Toxicants / Metals in Table 3.11-1
	<p>could severely constrain or prevent cooling water discharges during that period which could result in a significant constraint to production at the site, effectively preventing operation of the dairy plant during that period. This would have significant economic costs (local, regional as well as national in terms of export potential) as well as potential environmental effects if milk cannot be processed.</p> <p><u>Social Costs</u></p> <p>Inability to consent discharges with a temperature component (or consent conditions that cannot be met). Potential for sites to reduce production or shut completely with potential employment losses and fewer opportunities. By way of example, HPS is one of the largest employers in Huntly and significantly reduced generation during summer could have significant implications.</p> <p>There would also be significant social costs through potential issues with security of electricity supply if the HPS cannot operate in the summer months when river temperatures are naturally elevated above 20°C.</p> <p><u>Cultural Costs</u></p> <p>This is a matter for tangata whenua to confirm (including those benefits).</p>	
Efficiency and effectiveness of achieving objectives	<p>A temperature attribute is not effective for the following reasons:</p> <ul style="list-style-type: none"> • There are significant natural variations in temperature not caused by point or diffuse source discharges; • The temperature in several waterbodies, including the mainstem of the Waikato River upstream of the HPS already exceed the proposed Table 3.11-1 value for reasons unrelated to diffuse or point source discharges; • Existing provisions in the regional plan, including limits on temperature changes and temperature limits for water bodies already provide controls over temperature for resource consent processes. <p>A temperature attribute is not an effective means of achieving the PC1 objective – the restoration of the water quality of the Waikato and Waipā River so that it is “safe for people to swim in and take food from over its entire length”. No evidence</p>	<p>An “other toxicants” attribute is not effective for the following reasons:</p> <ul style="list-style-type: none"> • There has been no site-specific consideration of ANZ guideline values or their implications for diffuse and point source discharges; • There has been no assessment of what the relevant guideline would be for different catchments within the overall Waikato – Waipā catchment that would take into account existing water quality, what the contributors to water quality are and what changes would occur if a ANZ guideline value is adopted as an attribute state • There has been no consideration of which level of protection used in the ANZ guidelines would be relevant to restoration of the water quality of the Waikato and Waipā River so that it is “safe for people to swim in and take food from

CONTAMINANT		
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	has been presented that indicates that temperature limits the ability for people to swim in the river or to safely/take food from it.	<p>over its entire length (the guidelines use levels of protection of species of 80%, 90%, 95% and 99% in various situations);</p> <ul style="list-style-type: none"> • The ANZ guidelines are “trigger values” which trigger further evaluation if they are exceeded, rather than being attribute states or standards.
Risk of acting or not acting if there is insufficient or uncertain information about the subject matter of the provisions.	<p>There are no risks of not acting / including temperature and other toxicant attributes in Table 3.11-1, for the following reasons:</p> <ul style="list-style-type: none"> • Point source discharges already require resource consent (typically as discretionary activities) under existing rules in the Waikato Regional Plan. These resource consent processes provide site / activity specific consideration of the effects of a discharge with elevated temperature or parameters with ANZ guideline values. • The Waikato Regional Plan already contains guidelines in relation to temperature (Section 3.2.4) – namely the water temperature (after reasonable mixing) should not be changed by more than 3°C and the temperature of the water (after reasonable mixing) shall not be caused to exceed 25°C as a result of added heat and shall not adversely affect the passage or spawning of fish (for indigenous fisheries and fish habitat). While the guidelines apply as standards for permitted activities, they also provide guidance for consent application process, which can then take account of site specific aspects such as adaptation to natural temperature variations (e.g. trout tend to avoid the Waikato River during warmer summer months) or specific water quality at a given location. • When a discharge contains parameters with ANZ guideline values, an assessment is undertaken against these values as part of a resource consent process already, applying the appropriate species protection level to the characteristics of the discharge, location and receiving environment. 	

40. The table above is not a full s32AA analysis; however, in my opinion, the information provided therein indicates that it would be difficult for a full s32AA analysis to support the inclusion of temperature and other toxicant attributes in Table 3.11-1. The table shows that:

- a) For temperature, it is not apparent that the inclusion of a temperature attribute would be appropriate or necessary for meeting the overarching objective of PC1 (restoring the water quality of the Waikato and Waipā Rivers such that they are safe for people to swim in and take food from).
- b) There are environmental benefits from controlling and managing temperature and toxicants. However, these are already controlled through rules in the Regional Plan or in my opinion are unlikely to arise as a result of diffuse discharges. I consider it unclear and uncertain what the additional benefits, costs or implications of including these as attributes in Table 3.11-1 would be over retaining the status quo controls and provisions in the Regional Plan, which include the control of these parameters through existing standards (for permitted activities) and through comprehensive resource consent processes.
- c) The economic costs of these additional attributes could be significant, including to the whole of New Zealand. If these attributes are to be included in Table 3.11-1, a thorough assessment should be undertaken quantifying the economic costs of including them, including if they are to be interpreted as “bottom lines” and what the implications for existing activities, such as the HPS, would be, including the effects of significant constraints.
- d) The economic costs could include businesses needing to stop or reduce operating over the summer months when ambient temperatures are elevated, restricting or preventing discharges. As an example, electricity generation at the HPS could potentially be severely limited throughout summer months, when thermal generation provides essential electricity supply for New Zealand when other electricity generation may be constrained, as was experienced over the recent (2018 – 2019) summer period. Significant restriction to, and uncertainty associated with, generation of electricity at the HPS would have significant impacts on the security of electricity supply to New Zealand and would likely have

significant costs and economic flow-on effects that need to be quantified in a robust s32AA.

- e) The economic and social benefits of including temperature and other toxicant attributes in Table 3.11-1 relative to the status quo are difficult to identify or quantify.
 - f) The social costs are linked to whether the attributes are interpreted as “bottom lines” where consent will not be granted if an attribute would be exceeded, or existing consents are reviewed to ensure the limit is not exceeded. The social costs that may arise include a reduction in employment opportunities. From an HPS specific perspective, the social costs are reduced local employment opportunities and local, regional and national social costs of a reduction in electricity generation capacity (and security of supply) through the summer months (when ambient river temperatures are high).
 - g) From an efficiency and effectiveness perspective, I can see no compelling reason why temperature and other toxicant attribute limits in Table 3.11-1 would be an efficient and effective means of achieving the plan change objective (which is to ensure the water quality of the Waikato and Waipā River is safe to swim and gather food from).
41. I have assessed the risk of not acting (i.e. not including temperature and toxicant attributes in Table 3.11-1) as being low for the following reasons:
- a) Point source discharges of temperature and the toxicants in the ANZ guidelines are already controlled by way of the resource consent process. These contaminants are fully assessed on an activity/discharge/site specific basis. To obtain resource consent the onus is on the applicant to confirm that the effects of temperature and toxicants are appropriately avoided, remedied or mitigated to enable consent to be granted. There is nothing to suggest that these parameters are not being appropriately controlled or assessed through resource consent processes at present.
 - b) The Waikato Regional Plan has specific standards in relation to temperature for permitted activities. These standards apply as guidelines

for all resource consent activities and are referred to extensively in consent processes.

- c) The ANZ guidelines are used extensively through resource consent processes to establish appropriate resource consent conditions.
42. While I have focussed on temperature and other toxicant attributes in the assessment set out in Table 1, the same analysis is required for any other attribute proposed. I consider that there is a lack of information available (based on the JWS) as to exactly what the additional or modified attributes would be in terms of Table 3.11-1. Due to this lack of certainty, I consider that the implications of any new or modified attribute(s) are uncertain and on that basis, it would be difficult to complete the required s32AA further evaluation.

Policy Implications

43. In my evidence for the Block 2 hearings I discussed the implications of any changes or inclusions in respect of Table 3.11-1 on the policy framework of PC1.
44. Any additional attributes that do not directly relate to the management of nitrogen, phosphorus, sediment and microbial pathogens included in Table 3.11-1 would need to be reflected in the policies of PC1.
45. In addition, to have a framework where temperature is an attribute of PC1 (for example) the objectives and policies, in my opinion, would need to reflect this. This would include identifying strategies for managing temperature, such as control of riparian vegetation, in the same way that PC1 identifies strategies and methods for reducing nutrient losses from land use activities.
46. PC1 does not, nor does any of the evidence that I have read, provide the strategies or mechanisms to control temperature or toxicants, aside from being a matter to consider in the resource consent process for point source discharges.
47. I do not consider that a full and proper s32AA further assessment has been carried out to justify the inclusion of temperature and other toxicant attributes in Table 3.11-1, nor is there any policy basis for including these as attributes in Table 3.11-1. I am not aware of any s32AA analysis supporting additional

objectives and policies that justify the inclusion of temperature and toxicant attribute states in Table 3.11-1.

48. I do not consider that the PC1 policy framework supports additions to the attributes in Table 3.11-1.

Richard Matthews

12 July 2019

Appendix 1

32 Requirements for preparing and publishing evaluation reports

- (1) An evaluation report required under this Act must—
 - (a) examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and
 - (b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—
 - (i) identifying other reasonably practicable options for achieving the objectives; and
 - (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and
 - (iii) summarising the reasons for deciding on the provisions; and
 - (c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.
- (2) An assessment under subsection (1)(b)(ii) must—
 - (a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—
 - (i) economic growth that are anticipated to be provided or reduced; and
 - (ii) employment that are anticipated to be provided or reduced; and
 - (b) if practicable, quantify the benefits and costs referred to in paragraph (a); and
 - (c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.
- (3) If the proposal (an amending proposal) will amend a standard, statement, national planning standard, regulation, plan, or change that is already proposed or that already exists (an existing proposal), the examination under subsection (1)(b) must relate to—
 - (a) the provisions and objectives of the amending proposal; and
 - (b) the objectives of the existing proposal to the extent that those objectives—
 - (i) are relevant to the objectives of the amending proposal; and
 - (ii) would remain if the amending proposal were to take effect.
- (4) If the proposal will impose a greater or lesser prohibition or restriction on an activity to which a national environmental standard applies than the existing prohibitions or restrictions in that standard, the evaluation report must examine whether the prohibition or restriction is justified in the circumstances of each region or district in which the prohibition or restriction would have effect.

32AA Requirements for undertaking and publishing further evaluations

- (1) A further evaluation required under this Act—
 - (a) is required only for any changes that have been made to, or are proposed for, the proposal since the evaluation report for the proposal was completed (the changes); and
 - (b) must be undertaken in accordance with section 32(1) to (4); and
 - (c) must, despite paragraph (b) and section 32(1)(c), be undertaken at a level of detail that corresponds to the scale and significance of the changes; and
 - (d) must—
 - (i) be published in an evaluation report that is made available for public inspection at the same time as the approved proposal (in the case of a national policy statement or a New Zealand coastal policy statement or a national planning standard), or the decision on the proposal, is notified; or
 - (ii) be referred to in the decision-making record in sufficient detail to demonstrate that the further evaluation was undertaken in accordance with this section.
- (2) To avoid doubt, an evaluation report does not have to be prepared if a further evaluation is undertaken in accordance with subsection (1)(d)(ii).
- (3) In this section, proposal means a proposed statement, national planning standard, plan, or change for which a further evaluation must be undertaken under this Act.