

IN THE MATTER of the Resource Management Act 1991 (the Act)

AND

IN THE MATTER A hearing of application by Tararua District Council to Horizons Regional Council for APP-1993001253.02 for resource consent in relation to the discharge of treated wastewater from the Pahiatua Township into the Mangatainoka River, a discharge to air (principally odour) and a discharge to land via seepage, Julia Street, Pahiatua.

REPORT TO THE COMMISSIONERS

DR BRENT COWIE (CHAIR), MR REGINALD PROFFIT AND MR PETER CALLANDER

EVIDENCE OF TABITHA MANDERSON, SENIOR RESOURCE MANAGEMENT PLANNER

1st May 2017

1. INTRODUCTION

- 1.1 My name is Tabitha Manderson. I am a Senior Resource Management Planner with the consulting firm Opus International Consultants Limited (Opus), a firm specialising in engineering, environmental science and planning. My qualifications are a Bachelor of Agricultural Science (Massey University), Post-Graduate Diploma in Environmental Agricultural Science (Massey University) and a Master of Applied Science (Natural Resource Management) (Massey University). I have undertaken various Post-graduate papers Planning (Massey University). I am an Associate Member of the New Zealand Planning Institute. I have completed the Making Good Decisions programme, and am a current certificate holder.
- 1.2 I have over 17 years' experience in planning and resource management. I have been employed by Opus as a Senior Resource Management Planner since October 2007. Since joining Opus I have been engaged in various roles, including providing assistance to various Councils to process consent applications as well as preparing consent applications on behalf of clients. I previously worked for Horizons Regional Council in several roles including over three years as a Consents Planner. As a Consents Planner I processed a diverse and complex range of Land Use Consents, Discharge Permits and Water Permits, including those that were decided at Hearings. I have assisted Tararua District Council with a number of Resource Consent Applications, including other applications associated with other wastewater treatment plants in the Tararua District. I have also assisted a number of other Territorial Authorities with preparing consent applications relating to wastewater treatment plants. I also regularly review consent applications prepared by other planners employed by Opus. I have also worked for the Ministry for the Environment, Taranaki Regional Council and the Wanganui District Council.
- 1.3 I confirm that I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note. I agree to comply with the Code of Conduct. Except where I state that I am

relying upon the specified evidence of another person, my evidence in this statement is within my area of expertise. I have not omitted to consider any material facts known to me that might alter, or detract from, the opinions that I express.

- 1.4 I was engaged in 2014 to assist Tararua District Council prepare the consent application. I have had no direct involvement with Consultation undertaken by TDC to date, other than attending the pre-hearing meetings and responding to any queries from submitters.
- 1.5 In this report I have provided:
 - An outline of any areas where I disagree with the planning evidence provided by Ms Morton in her circulated Section 42A report;
 - Some additional areas of assessment for the panel to consider in their decision making process;
 - Commentary on the consent conditions Ms Morton's Section 42A report;
 - Commentary on some matters raised in submissions; and
 - A recommendation to the Panel.
- 1.6 In preparing this report I have considered the Section 42A reports prepared by Ms Fiona Morton, Senior Consultant Planner, Michael Joseph Paterson, Scientist - Freshwater (Horizons Regional Council), Tim Michael Baker, Groundwater, Deborah Anne Ryan, Air Quality. I have considered the submissions received through the notification process. I have also considered the evidence prepared by Dr Olivier Ausseil, Aquanet, Mr John Milton Crawford Wastewater Engineer, and Roger MacGibbon (Opus Consultants for the applicant).
- 1.7 I have visited the site and am generally familiar with the surrounding area. I am familiar with the provisions of the Resource Management Act 1991 (the Act) and the One Plan.
- 1.8 I do not provide a description of the proposal or the site as I consider this is adequately addressed in the application and the Officer's Section 42A report.

2. BACKGROUND AND CHANGES TO APPLICATION

- 2.1 It is acknowledged that there have been a number of changes proposed to the activity, and I believe it is useful to comment on my understanding of the intention of these as it does have some bearing on the policy assessment given below.
- 2.2 As described in the original application lodged (prior to notification) the treatment ponds at Pahiatua underwent a relining process in 2002/2003. The ponds were relined with clay. Unfortunately records were not able to be retrieved from the then consultant and contractor regarding the relining undertaken, hence it was not able to be demonstrated what the final permeability achieved was. Anecdotal evidence from discussions with supervisors who worked on the job was that testing of the clay was undertaken at the time. Due to not being able to demonstrate the permeability consent was sought for seepage from the ponds.
- 2.3 The original application proposed a number of upgrades with the final discharge to be via an infiltration gallery. The reasons for needing to change the final discharge component of the application have been presented to the panel already, relating to the need to retain a secure drinking water source for the Pahiatua township.
- 2.4 The approach taken by TDC was to investigate the opportunity to secure (in principal) land adjacent to the existing WWTP at Pahiatua which would allow room for a wetland to be built. As described in Section E of Ms Morton's report a subsequent application was made for the earthworks consent that is required to allow for construction of the wetland. Accordingly the

discharge location as notified has altered. Legal advice was that as the discharge was ultimately to the same receiving environment the application could proceed.

3. SUBMISSIONS, PRE HEARINGS

- 3.1 I have read the original submissions, and do not repeat a summary of them here as they are provided in Ms Morton's report.
- 3.2 As noted by Ms Morton, 3 pre-hearings have been held and I understand a report pursuant to section 99(5) is to be supplied to the panel.
- 3.3 In Section 14 of my evidence below I make some comment on recommended conditions and the degree to which I consider they address some of the specific relief sought in the submissions.

4. ASSESSMENT – SECTION 104

- 4.1 In Section I of Ms Morton's Section 42A report she outlines the matters in Section 104 that are relevant to the application. I concur with the matters identified by Ms Morton and I do not repeat them here.
- 4.2 In addition to the technical s42A reports I have also considered the evidence prepared by Dr Ausseil, Mr Crawford and Mr MacGibbon.

5. ACTUAL AND POTENTIAL EFFECTS ON THE ENVIRONMENT

Effluent Quality – Existing Plant performance and upgrades

- 5.1 The evidence of Mr Crawford describes the existing wastewater treatment system and current levels of performance. He considers that the current performance of the WWTP is good in comparison to typical pond based systems in New Zealand. He provides a construction history of the plant and describes the treatment upgrades more recently installed (from 2014). He comments on the functional operation of the upgrades, i.e. what tertiary treatment is provided by the various equipment installed.
- 5.2 He provides an analysis of flows from June 2014 to December 2016, acknowledging two periods where there is either a gap in the data or the data appears unusable. He discusses various flows and possible influences of inflow and infiltration contributing to peak wet weather flows in Section 7.7 to 7.9 of his evidence.
- 5.3 Due to lack of influent data, Mr Crawford has calculated plant loadings based on engineering texts and sets out his assumptions used. This is an update of information provided in the application. His Table 1 also shows a total daily load based on a limited number of influent 'grab' samples, and notes the two methods show a high level of agreement.
- 5.4 In Table 4 he presents Daily Effluent Flows and Loads for the 2016 year, and in Table 5 the Pollutant Removal Performance for 2016. Presented as a percentage removal he calculated % removal of 82% for Total Nitrogen, 81% for DRP and 92% for cBOD₅.
- 5.5 Mr Crawford in Table 6 of his evidence presents proposed Effluent Quality Standards. He notes that while these standards are not yet being achieved, based on sampling results to date, he considered the standards in Table 6 will be able to be achieved once the plant is fully commissioned. He discusses why he does not agree with all the standards, particularly in relation to E.coli, put forward in the Horizons conditions. He also discusses his concerns regarding the proposed conditions that have a number of performance parameters as absolutes.

- 5.6 In Section 10.8 of his evidence Mr Crawford recommends that a formal commissioning and optimisation process is followed at the Pahiatua site.
- 5.7 The effluent standards recommended by Mr Crawford are reflected in the conditions attached to this evidence. I have also recommended a condition reflecting that a formal commissioning process is followed. This, in addition to the Management Plan offered as mitigation in the original application will, in my opinion, ensure that the effluent standards are achieved in a timely manner that is still fair and reasonable for the applicant.

Constructed Wetland

- 5.8 As noted above, the applicant now proposes to install a constructed wetland downstream of the tertiary processes as a final 'polishing' step. As such the wetland is not being relied on for additional effluent quality performance. The evidence of Mr MacGibbon however describes what a well-constructed functioning wetland can achieve (paras 12-15).
- 5.9 Mr MacGibbon describes how constructed wetlands remove nitrogen predominantly by denitrification, which results in nitrate and nitrite being broken down into nitrogen and oxygen gas. He also notes that wetlands can also reduce living faecal bacteria levels through prolonged exposure to sunlight. Wetlands are generally less effective at extracting phosphorus.
- 5.10 In para 16 Mr MacGibbon outlines design criteria to ensure optimal nutrient extraction and faecal bacteria mortality. He goes on in para 26 to state that a well-performing, well maintained wetland with a water residence time of 2 to 4 days would be expected to extract 50% or more of the nitrate contained in the influent.
- 5.11 The proposed wetland would be some 152m long with an average width of 32m. Based on the average flow figures provided by Mr Crawford the wetland would hold these flows for approximately 2 days with an average dry weather flow being held for approximately 3 days.
- 5.12 Mr MacGibbon describes wetland construction in paras 32 to 35. Noting that plant establishment is critical to wetland function, I have recommended a condition that takes this in to account by way of requiring a construction management plan.

Effects on Surface Water Quality

- 5.13 Mr Patterson's technical 42A report identifies the One Plan Schedule B Values in the vicinity of the proposed discharge, land use within the Mangatainoka catchment, water quality and a description of native fish communities and migrations. In Section H of his report he details current effluent quality and effects from the existing discharge.
- 5.14 Mr Patterson's report provides his assessment against One Plan targets for monitoring data from 2010 to 2016. Upstream of the current discharge ammoniacal nitrogen was met, SIN exceeded the One Plan targets in all years and DRP exceeded the targets in three of the seven years monitored. Downstream of the existing discharge ammoniacal nitrogen was met in all years, SIN target was exceeded in all years and DRP exceeded the targets in four of the seven years monitored.
- 5.15 In respect to life supporting capacity, in para 72 of his report Mr Patterson considered that pH, temperature, dissolved oxygen (DO), periphyton cover, periphyton biomass (chlorophyll a), MCI, QMCI, ammoniacal nitrogen and toxicants are all relevant.

- 5.16 In his summary Mr Patterson notes that there is currently an increase in periphyton downstream of the discharge relative to upstream, but with no clear impact on the macroinvertebrate community. He suggests that DO conditions may be exacerbated downstream of the discharge relative to upstream. He considers it possible that the discharge is maintaining elevated nutrient concentrations resulting in degradation of the life supporting capacity in this reach of the Mangatainoka River.
- 5.17 Mr Patterson does not comment on improvements that will be seen as a result of the upgrades, citing that as no clear effluent quality standards had been provided at the time of writing his evidence it was difficult to comment further.
- 5.18 Mr Patterson recommends monitoring of discharge volumes, effluent quality, and the receiving environment. He also recommends one off continuous monitoring of dissolved oxygen upstream and downstream of the discharge following completion of the upgrades. In para 100 he refers to the recently granted Feilding WWTP and AFFCO discharges as having appropriate in-river standards with refinement to the values and targets for the Lower Mangatainoka water management sub-zone.
- 5.19 Dr Ausseil details in Section 4.1 of his evidence a summary of the current effects of the discharge. He supports the proposal to shift the discharge point out of Town Creek. Currently there is a small but statistically significant increase in ammoniacal nitrogen concentration as a result of the current discharge. The ammoniacal concentrations are below the One Plan targets and risk of ammonia toxicity on aquatic life is low. While the increase in *E.coli* concentrations downstream is not considered to be statistically significant, the number of samples that exceeds the One Plan targets does increase. The One Plan target for DRP is exceeded upstream and downstream of the discharge with the discharge increasing concentrations of DRP. The One Plan SIN target is exceeded upstream and downstream of the discharge. In Dr Ausseil's opinion the current discharge is not causing a more than minor increase in SIN concentrations or loads even during low flow periods.
- 5.20 Dr Ausseil discusses the current effects on periphyton biomass. He considers that there is no clear evidence of an increase in periphyton cover between upstream and downstream of the discharge in the last 5 years. He considers that the One Plan target for periphyton is met upstream of the discharge and met or very marginally exceeded downstream of the discharge.
- 5.21 Dr Ausseil discusses why he considers that P-limited conditions dominate the Mangatainoka River under all flow conditions. He notes that the proposed upgrades primarily address phosphorus removal and would significantly reduce DRP concentrations in the discharge. He goes on to state that once the proposed effluent standard is met, the potential increase in DRP concentrations during low flows will be of limited ecological relevance.
- 5.22 *E.coli* concentrations are statistically different between upstream and downstream sites, and has not always met the One Plan targets for the existing discharge. Based on the technical evidence it is my understanding that the discharge would contribute to *E.coli* concentrations. The UV unit would decrease the *E.coli* concentrations and Dr Ausseil expects this would result in the improvement effluent quality being such it would not be a material concern.
- 5.23 Dr Ausseil in para 9.3 responds to the discussion in Mr Patterson's 42A report regarding Dissolved Oxygen (DO) in the Mangatainoka River Upstream and Downstream of the proposed discharge. I have reflected on the comments regarding removing the DO saturation standard, given if the standard is currently exceeded upstream it is unlikely to be able to be complied with downstream. I support the recommendation of one-off DO monitoring.

Timing for upgrades

- 5.24 It is my understanding that all the additional treatment processes (other than the wetland) are now in place at Pahiatua. Mr Crawford has outlined how long a typical optimisation process

takes. He has recommended an 18 month formal optimisation process, I have recommended a condition based on this advice to provide certainty for all parties as to when the plant will be fully operational and improved effluent quality is discharged to the environment.

- 5.25 Ms Morton has requested an indication of how long before the discharge point could be shifted from Town Creek. Removal of the discharge from Town Creek is depending on the consent for earthworks being granted. One consent is granted the earthworks to construct the wetland can be completed and plant establishment can then occur. As indicated by Mr MacGibbon it is best for earthworks to occur during the summer period (generally drier conditions) but that ground conditions should be moist for plant establishment and either a spring or autumn planting can be anticipated. Currently conditions refer to the wetland being in use by 1 July 2018. Subject to consent being granted and earthworks occurring prior to March 2018, planting could in theory occur in the April/May period and therefore achieve the 1 July 2018 condition. However, this does depend on when consent is granted as the applicant would still need to secure a suitable contractor and supply of wetland plants. Accordingly, I have recommended an alternative condition for consideration based around a wetland construction and establishment plan.

Discharges to Air

- 5.26 Ms Morton describes the potential effects on odour in paras 70 to 78, based on the evidence of Ms Ryan. The evidence of Ms Ryan discusses that the plant has not historically had any adverse effects as a result of air discharges. Mr Crawford also discusses in his evidence the various forms of discharges to air that are potentially produced during wastewater treatment plants such as Pahiatua.
- 5.27 Ms Ryan lists a number of conditions which she believes would be appropriate as conditions on consent, these are reflected in the conditions presented in Appendix 1 of Ms Morton's 42A report. Mr Crawford notes that continuous dissolved oxygen monitoring is already in place at Pahiatua but recommends periodic calibration of the continuous monitor with a hand held unit. I consider that this could easily be achieved through noting this on the odour management plan condition.
- 5.28 Subject to the imposition of the recommended conditions, I am of the opinion that the potential effects from the discharge to air will be no more than minor.

Groundwater

- 5.29 The Section 42A report of Ms Morton discusses the evidence of Mr Baker in relation to groundwater. No additional specific evidence has been prepared in relation to groundwater, so I am therefore also guided by the evidence of Mr Baker. However, Mr Crawford in para 13.5 of his evidence has commented with regards to the level of 'treatment' of wastewater that may seep from the ponds.
- 5.30 I consider it appropriate for a monitoring programme to be established by way of conditions, to ensure that groundwater quality is demonstrated to be maintained. There is no evidence before me to suggest that potential effects of seepage from the ponds on groundwater would change considerably over time. The WWTP ponds have been in existence for some time. The evidence of Mr Baker noted that in general terms the discharge is likely to be indirectly measured as part of the surface water monitoring. If monitoring over time demonstrates no change in groundwater quality attributable to the activities at the WWTP then the applicant in the future may wish to apply for a variation to reduce or cease the monitoring. I do not have evidence before me currently that would enable me to recommend a reasonable time limit. Other consents I have been involved with have required a 3 year monitoring period which is considered sufficiently long enough for understanding whether there is a change in

groundwater above and below the ponds. If this is discussed further at the hearing I may be in a position to suggest a time limit or reduction in frequency of the groundwater monitoring.

- 5.31 Mr Baker suggests that the wetland should have a full clay liner of a permeability of 1×10^{-9} m/s. I note several points in relation to this. Firstly, this is the permitted activity standard for wastewater treatment and storage facilities, to impose this as a condition when a consent has been sought would, in my opinion, frustrate the consent (in other words consent would no longer be required if the permitted activity standards are met).
- 5.32 Secondly, Mr MacGibbon discusses lining wetlands and the consequences this can have, paras 18-22 of his evidence. It would seem illogical to me to impose a permeability standard that would have potential consequences on the functionality of the wetland.
- 5.33 I note that by the time the wastewater reaches the wetland it would have had the benefits of full treatment, a concern which Mr Baker raises in relation to seepage from the treatment ponds. Accordingly, I am not fully clear as to why the wetland itself needs to be lined given it will be the fully treated wastewater entering the wetland.
- 5.34 I have recommended additional conditions requiring a final detailed design of the wetland to be submitted. This would include details of the sourced clay liner for part of the wetland design and how it will be constructed. I have also recommended that the management of the wetland be detailed and that this be included in the management plan for the WWTP.

Recreation and amenity values

- 5.35 I am not aware of any reports completed to confirm the recreational uses of the area. I agree with the opinion of Ms Morton that a recreational survey would be an appropriate way of addressing this.

Cultural Values

- 5.36 I generally agree with the description of effects on Cultural Values discussed in the 42A report of Ms Morton, and that evidence presented at the hearing by Rangitane o Tamaki nui a Rua Inc, Kahungunu ki Tamaki nui-a-rua, and Te Roopu Taiao o Ngati Whakatere will assist the Commissioners in assessing these effects.
- 5.37 I note that none of the iwi submitters sought a decline for the application but other relief was requested. In particular ongoing engagement and sharing of information. As discussed below in para 8.6 the proposed wastewater forum is, in my opinion, a clear mechanism for achieving this at least in part.

Soil Disturbance effects

- 5.38 Ms Morton discusses the soil disturbance effects in paras 88 to 95 of the Section 42A report. At the time of preparing this evidence an updated draft ESCP was being prepared, in response to the questions raised in para 94. This will be circulated as soon as practical.
- 5.39 I would however make the comment that the draft ESCP was based on a conceptual design, which may be subject to amendments following the decision making process. Accordingly, further refinement may be required. I note that the indicative conditions put forward by Ms Morton include submitting a finalised ESCP for technical certification prior to earthworks

being undertaken. This is a sensible approach, and enables contractor involvement which, in my experience, is highly beneficial to earthworks projects.

5.40 Subject to suitable conditions the effects from earthworks are no more than minor.

6. NATIONAL ENVIRONMENTAL STANDARDS AND NATIONAL POLICY STATEMENTS

6.1 I agree with paragraphs 96 to 101 of Ms Morton's evidence.

7. NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT

7.1 I agree with paragraphs 102 to 110 of Ms Morton's evidence.

8. ONE PLAN REGIONAL POLICY STATEMENT

8.1 I agree with Ms Morton that the correct planning instrument in respect of assessing objectives and policies is the One Plan – Plan Change 1 (2016).

Chapter 2: Te Ao Maori

8.2 I agree that the Objectives and Policies of Chapter 2 are relevant.

8.3 A Cultural Impact Assessment has been prepared. This assists to quantify some of the effects on Mauri.

8.4 In response to para 118 of Ms Morton's report, two technical reports that considered, at least at a high level, land treatment options were included with the application as lodged. Accordingly, I am of the opinion that the applicant did consider land disposal but they determined it was not feasible at that point in time.

8.5 I do not agree with para 119 of Ms Morton's report. I note that the relief sought in submissions from the three iwi groups requested included, among other matters, having access to monitoring data, that further monitoring be undertaken and that investigation of alternatives be undertaken.

8.6 As a result of pre-hearings a wastewater forum has been agreed to, which I consider is a clear mechanism for the sharing of information as well as the ongoing work in considering the BPO for this site in the future. I consider the wastewater forum would go some way towards meeting the relevant Objectives and Policies identified in Chapter 2 and is in line with the requested relief to be kept informed.

8.7 I agree with Ms Morton that evidence presented by iwi submitters at the hearing could help with further assessing this objective and supporting policies.

Chapter 3: Infrastructure and Energy

8.8 I am in general agreement with Ms Morton's assessment of the Chapter 3 Objectives and Policies.

Chapter 4: Land

- 8.9 I am in general agreement with Ms Morton's assessment of the Chapter 4 Objectives and Policies.

Chapter 5: Water

- 8.10 The application submitted and evidence of Mr Patterson and Dr Ausseil have all noted that the One Plan targets are not currently met upstream or downstream of the current discharge. Accordingly, Policy 5-4 applies and the panel must consider whether the proposal will contribute to enhancing the existing water quality in order to meet water quality targets and/or the relevant Schedule B values and management objectives.
- 8.11 The evidence of Mr Crawford outlines potential improvements in effluent quality following the full commissioning of the plant, and has identified the expected effluent standards. This demonstrates that water quality, for at least some water quality parameters, in particular DRP and *E.coli*, should be enhanced by the full commissioning. It is acknowledged that there remains uncertainty around quantifying the potential improvements at this stage. However a functional description of the process upgrades was provided in the application as well as the expert evidence of Mr Crawford. Importantly for the panel is that effluent standards are recommended by Mr Crawford and I have reflected these in the conditions in Appendix I.
- 8.12 GW quality is a consideration and Policy 5-6 requires for GW quality to be maintained or enhanced. Currently there is little data to quantify effects, Mr Baker has recommended various monitoring and investigations to be undertaken. I have recommended some additional conditions reflecting the requirement to install monitoring bores. I have also recommended an additional condition regarding permeability investigations for the existing ponds and reporting on the findings.
- 8.13 Policy 5-9 provides specific guidance in relation to the management of point source discharges to water. In relation to Policy 5-9 a, the panel needs to consider what impact the proposed discharge will have on the Schedule B Values as identified. Mr Patterson raises concerns regarding the ongoing impact that the discharge will have on an already enriched environment, and in particular discusses concerns in relation to life supporting capacity more than other values. In para 5.4 of his evidence Dr Ausseil notes that from a technical point of view a change in QMCI provides a direct measure of the degree of effects of a specific activity on life supporting capacity. The current discharge meets the change targets specified in the One Plan. As identified by Ms Morton mauri is also one of the values identified. The CVA prepared by Rangitane o Tamaki nui a Rua Inc discusses the effects on Mauri. On page 56-57 of the CVA it notes they support that no treated waste from sewage treatment plants should be discharged into the Manawatu River system and that rather a ground-based dispersion system should be utilised wherever possible. I note that this CVA was prepared prior to the amendment of the application to include the wetland. My understanding is that further discussions have recently been held between representatives of Rangitane and TDC. A further meeting is scheduled for the 12th of May, the outcome of which will hopefully be able to be discussed at the hearing and may assist with further assessment of this policy.
- 8.14 For Policy 5-9b, the discharge currently contributes to One Plan water quality targets being breached. Of the targets currently being breached, there is a minor but statistically significant change in periphyton currently seen. It is my understanding from the evidence of Dr Ausseil that phosphorus in the discharge is likely the driver for the mild increase in periphyton growth seen. From the application and the evidence of Mr Crawford it is clear that the upgraded tertiary processes will reduce DRP concentrations in the proposed discharge. The UV is a form of treatment that will reduce E.Coli, currently the discharge contributes to the number of exceedances of this target. Monitoring will address any remaining uncertainty with regards to periphyton growth. While not part of the formal (tertiary) treatment upgrades, the evidence of Mr MacGibbon makes it clear a well-functioning wetland can have the additional benefit of

reducing nitrogen from discharges. Again the monitoring proposed would determine long term effects.

- 8.15 In relation to Policy 5-9 c, with regards to best management practice, I note the opinion of Mr Crawford that the current ponds are performing well and that the additional treatment processes will provide for a pragmatic standard that is financially achievable for TDC. I am comfortable to rely on this expert opinion in relation to treatment, as I do not have other expert evidence to consider. The application noted that a management plan would be prepared, which I would consider, in general terms, to be best management practice. For instance, the management plan will ensure that staff changes will not result in the plant to not be able to continue to perform optimally.
- 8.16 Policy 5-9 d addresses the need to allow reasonable time for improvements, Mr Crawford has outlined the commissioning process. I consider that imposing a condition reflecting the commissioning process to be appropriate, and have recommended a condition based on this.
- 8.17 With regard to Policy 5-9 g, I am in general agreement with Ms Morton, but do note that the applicant has presented in the application reasoning for the proposed upgrades. I understand that Blair King intends to present evidence at the hearing as to the process of determining upgrades to date. I also note the recommended condition 5 of the general conditions which will require ongoing investigation in to BPO matters addresses Policy 5-9 g. In my opinion, this recognises that a BPO may change over time as technology or other circumstances (such as land availability or changes to costs¹ associated with different options).
- 8.18 I agree with Ms Morton that Policy 5-11 is a pivotal policy in the One Plan. It is also acknowledged that the current discharge does not meet this policy. What this Policy does is make it clear that there is a pathway for discharges of human sewage to water to be considered.
- 8.19 The application before the panel currently includes a constructed wetland and discharge pathway that does in my opinion meets Policy 5-11. I outline my reasoning below.
- 8.20 In considering whether a wetland would constitute overland flow I have considered the definition of land² in the RMA, which includes land covered by water. In addition the definition of a wetland under the RMA *includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.*
- 8.21 Ms Morton also acknowledges that a wetland does meet the Policy requirement (para 140), but with the caveat that not until constructed (para 190). Ms Morton also suggests that further discussion occur to determine to what degree the proposed wetland would address Mauri. As discussed earlier, TDC is meeting with Rangitane o Tamaki nui a Rua Inc and I expect an update will be available at the hearing.
- 8.22 The wording of Policy 5-11 presents a number of options for discharges. There is no requirement for all sub-paras to be met as they are separated by an “or”. Accordingly only one method required by the Policy needs to be met. While I acknowledge that I understand the Policy to be about addressing effects on Mauri, questioning the degree to which this will address Mauri is not required in order to be consistent with this Policy. The proposal will meet the Policy, the fact that the wetland is yet to be constructed does not in my opinion lessen the degree of consistency. To infer that the proposal will be inconsistent with the Policy until such time that the wetland is built is, in my opinion, a somewhat specious argument. A

¹ I note that economic costs are a consideration in determining a BPO as defined in the Act

² Land – (a) includes land covered by water and the air space above land; and.....

consent needs to be granted before the construction can occur. In determining a proposal it is not at all unusual for conditions to be imposed, such as constructing a wetland, forming part of any decision about the proposal.

- 8.23 I do not agree with the condition put forward by Ms Morton in relation to Policy 5-11, as the proposal for a wetland meets the requirements of this policy. I do however support a condition which requires the wetland to be constructed in a timely manner. The timing I have recommended takes in to account the advice of Mr MacGibbon with regards to wetland plant establishment.

Chapter 7 - Air

- 8.24 I concur with the assessment provided by Ms Morton in paragraph 141.

9. REGIONAL PLAN – ONE PLAN

Chapter 13 – Land

- 9.1 In para 145 Ms Morton concludes she is satisfied that the application is consistent with the relevant objective and policies of Chapter 13. I concur with this assessment.

Chapter 14 – Discharges to Land and Water

- 9.2 Ms Morton has identified additional Objectives and Policies that require consideration. I agree that these are relevant and provide some further discussion below.
- 9.3 In relation to para 147 of Ms Morton's 42A report, I have also provided an assessment against Chapter 5 in paras 8.8 to 8.25.
- 9.4 Responding to the question in para 148 of Ms Morton's evidence. I am not aware that additional work has been done in regards to Policy 14-4 (b) and (c).
- 9.5 I agree with the assessment of Policy 14-8 in relation to monitoring. I have made some additional recommendations in regards to monitoring conditions attached to this report based on the various technical reports.
- 9.6 As noted by Ms Morton in para 156 an assessment of the NPS-FM 14 is required by Policy 14-9. The matter of the adverse effect on the life supporting capacity of the Mangatainoka River is outlined in the effects section of this report, noting there is a difference of opinion between Dr Ausseil and Mr Patterson. I note that the effects of the current discharge appear to be well defined. The additional tertiary treatment processes are installed at the plant, but not yet fully commissioned. Mr Crawford has recommended a suitable timeframe for commissioning to occur and this is reflected in the conditions attached to this report. Of note is that the construction of the wetland should be able to be carried out in parallel to the commissioning of additional treatment plant processes.
- 9.7 In relation to the health of people and adverse effects, it is my understanding that the fully commissioned upgrades will improve disinfection provided which would contribute to avoiding adverse effects on the health of people and the community. Overall I consider the proposal is consistent with Chapter 14.

Chapter 15 – Discharges to Air

- 9.8 I agree with Ms Morton and her assessment against Chapter 15 Objective and Policies.

Chapter 12 – General objectives and policies

- 9.9 In considering consent duration and Policy 12-5, Ms Morton discusses the relevant criteria. In response to the criteria set out in (ii) the application on page 34 notes the asset value at that time was \$2 million and the upgrades planned being \$1.2 million. The cost of constructing the wetland is currently being determined. The degree of clay lining is, I understand, likely to be a key driver in determining cost.
- 9.10 In para 188 to 191 Ms Morton discusses consent duration. She cites a number of reasons for a shorter term than what is sought by the applicant. I do not agree with this rationale for a shorter term.
- 9.11 In my opinion there are stronger grounds to grant the term of 15 years as sought when considering the guidance set out in Policy 12-5.
- 9.12 Policy 12-5(a) states that generally the term sought by an application be granted other than as provided for under (b). Accordingly I consider the matters set out under (b) in turn.
- 9.13 In relation to 12-5(b)(i) I am not aware of any recognised code of practice, or good practice guidelines specifically in relation to the running of a WWTP. The application notes that TDC would prepare a management plan to ensure that the plant would continue to be operated as it should even with staff turnover. It is my general understanding that this would be considered to be good practice for the running of a WWTP. This mitigation offered up by the applicant does not appear to have been considered in any of the section 42A reports. In respect of environmental standards, the targets of the One Plan are relevant here, as is s107 of the Act. This is discussed in the effects section of my evidence. Overall I consider the proposal to meet Policy 12-5(b)(i).
- 9.14 12-5(b)(ii) requires an appropriate balance between environmental protection and investment by the applicant. My understanding is that the current value of the plant is \$2 million, and \$1.2 million has been invested in the upgrades, excluding the construction of a wetland. An additional cost would be required for the construction of the wetland. As noted in other parts of this report, my understanding is that the greatest benefit to the Mangatainoka River from this discharge will be from reducing phosphorus loads from the WWTP. The evidence presented in the application and from Mr Crawford makes it clear that the upgrades will improve phosphorus removal compared to the current discharge. Overall I consider the proposal to meet Policy 12-5(b)(ii).
- 9.15 Policy 12-5(b)(iii) requires consideration of the use of s128 reviews, I have recommended an additional review condition. On that basis I consider the proposal to meet this part of the Policy.
- 9.16 In respect of Policy 12-5(b)(iv) the activity is a sewage treatment facility.
- 9.17 Based on the discussion above, I consider it would be consistent with Policy 12-5(b) to grant consent for a term longer than 10 years.
- 9.18 To grant consent for a shorter duration the panel need to consider the following matters under Policy 12-5(c). I consider each of the sub-para of this Policy below –
- The activity is not likely to be required to cease at a specified time, as the activity is associated with providing for appropriate wastewater treatment for the community of Pahiatua.

- Sub-para (ii) requires consideration of whether any effects are unpredictable and potentially serious. While concern has been raised with regards to final wastewater effluent quality as quantified data is not yet available, I would consider that in general potential effects from WWTPs are not unpredictable. I note the evidence of both Dr Ausseil and Mr Crawford in this regard. I do not consider the effects unpredictable.
- In respect of sub-para(iii) the activity does not involve the long-term allocation of a resource whose availability is likely to change over time or in an unpredictable manner.
- Compliance history needs to be considered under sub-para(iv). I have asked TDC staff regarding compliance history but am not aware of any significant non-compliances at the Pahiatua WWTP³.

9.19 On balance, and on consideration of the policy guidance given, I am of the opinion that a 15 year term with reviews to coincide with the common catchment expiry date is appropriate.

9.20 I agree that review conditions are an appropriate tool and should be used, I have recommended an additional review date given I have also recommended a longer term.

Rule Framework

9.21 I agree with the rule assessment that consents are sought as Discretionary Activities.

10. OTHER MATTERS

10.1 The Manawatu River Accord was outlined as a relevant other matter in the application, and is discussed in Ms Morton's evidence. Accordingly, I am of the opinion that the Commissioners can consider economic costs.

10.2 I understand Blair King is to present, among other things, economic facts to the panel. The value of the asset and funds already identified for upgrades are identified in para 9.10 above.

11. SECTION 105

11.1 As noted in the application alternatives have been considered, in accordance with section 105. These were detailed in Section 1.5 of the application as lodged. Additional work has been undertaken on the construction of a wetland, as outlined by Mr Roger MacGibbon.

12. SECTION 107

12.1 The application provided a detailed assessment against section 107, and further assessment is provided in the evidence of Dr Ausseil and that this concluded that section 107 would be met. In para 181 of her 42A report Ms Morton discusses Mr Patterson's concerns regarding DO and possible effects on aquatic life. I note that section 107 refers to a significant adverse effect on aquatic life. I did not read Mr Patterson's evidence in such a way that it was a potential significant adverse effect on aquatic life.

12.2 With regards to the discharge to Town Creek currently, I agree it is appropriate to rely on s107(2)(b). Noting that the timing for removal from Town Creek depends on securing consent, timing of construction of the wetland and suitable plant establishment period.

13. COMMENTS PROPOSED CONDITIONS

³ Pers. Comm with Dave Watson. No compliance record has been requested, should one be made available this should be taken in to account.

13.1 Ms Morton usefully provides a suite of conditions. I am recommending some proposed changes and additions, based on the evidence of Mr Crawford, Dr Ausseil and Mr MacGibbon. I have attached a full set of conditions as Appendix I, with proposed changes or additions underscored and a number of comments that I would anticipate Ms Morton and others may wish to respond to.

14. RELIEF SOUGHT IN SUBMISSIONS

14.1 I comment, in general terms, about the relief sought by submitters that I believe are addressed by the current recommended conditions.

14.2 Term. A number of submitters requested a shorter term. I have provided an assessment against the policies that relate to determining term and I do not support a shorter term in this case, based on that policy assessment.

14.3 Assessment of the degree of human (recreation) use downstream. A condition has been recommended that a recreation survey be undertaken, which in my opinion is in keeping with the relief sought.

14.4 Monitoring of influent and effluent flows. Monitoring has commenced at the site, with some acknowledged limitations to some of what has been collected to date. A number of the recommended conditions will only be able to be achieved with appropriate meters in place and functioning correctly. Information collected from the meters (as well as other monitoring results) will be reported on to the Wastewater Forum.

14.5 Additional monitoring, including macroinvertebrates. Monitoring is proposed in the recommended conditions in Appendix I which should address this relief sought.

14.6 Investigations into alternative treatment and disposal options to inform the permit holder's decision on the best practicable option for treatment and disposal from the Pahiatua WWTP. The applicant has agreed to the establishment of a forum that will be provided with the findings of the feasibility study for alternative methods of treatment and discharge.

15. PART 2 ASSESSMENT

15.1 In Section P of her 42A report Ms Morton sets out the approach as confirmed by the High Court in relation to Part 2.

15.2 I agree with this assessment, and in a similar manner, based on the evidence currently available do not undertake a Part 2 analysis. I can also present a Part 2 analysis if required by the Commissioners.

16. CONCLUSION

16.1 The current effects of the discharge are well established. While there is concern raised regarding uncertainty with regards to final wastewater effluent quality, the panel are able to take in to account the expert opinion of Mr Crawford with regards to generally what the proposed upgrades will achieve. What is known from the functional description of the tertiary treatment to be used is that once commissioned and tuned, the upgrades do allow for enhanced phosphorus removal which is in the opinion of Dr Ausseil the main driver for effects that are being seen.

16.2 The Mangatainoka River does not currently meet One Plan targets upstream and downstream of the current discharge. Unsurprisingly the discharge contributes to the number of exceedances downstream. Policy 5-4 calls for, in my simplified wording, 'everyone to do their bit'. Upgrades have been installed and as noted above are specifically configured to

deal with what has been determined by most to be the nutrient of most concern (as above phosphorus) but also E.Coli through the UV disinfection.

- 16.3 Future effluent standards are proposed as conditions of consent and with this certainty the plant can be commissioned and fine-tuned to meet these standards. As noted by Mr Crawford it is a common and indeed critical step in a WWTP upgrade to fine tune at WWTP through the commissioning process.
- 16.4 Policy 5-11 is met, the fact that it requires the wetland to be built first does not, in my opinion, lessen the degree of consistency with this Policy. It would not, in my opinion, be reasonable to require the implementation immediately on grant of a consent – particularly when another consent (such as earthworks) is required.
- 16.5 That there are cultural effects is clearly identified in the CVA prepared and submissions received. Evidence presented at the hearing should help with refining how these effects may potentially be mitigated. There is a mechanism to address some of the relief sought by the respective iwi groups in the recommended conditions.
- 16.6 Ensuring that all upgrades and monitoring is undertaken is crucial to gathering information. I have recommended conditions requiring milestone reporting to meet this end.
- 16.7 In my opinion the proposal is not inconsistent with the relevant Objectives and Policies of the One Plan, acknowledging it is challenging to form an opinion with regards to the policies that relate to Te Ao Maori. Further evidence from iwi submitters at the hearing should assist in assessing the objectives and policies contained in Chapter 2 of the One Plan in particular.
- 16.8 Subject to the amended Conditions I remain of the opinion that the consent can be granted.

17. RECOMMENDATION

- 17.1 That subject to appropriate conditions imposed in accordance with Section 108 that the application be granted for a term of 15 years.

Tabitha Manderson



1st May 2017