

IN THE MATTER

of the Resource Management Act 1991
(the Act)

And

IN THE MATTER

of resource consent applications under
section 88 for AFFCO NEW ZEALAND
LIMITED for discharges from the
AFFCO MANAWATU EXPORT MEAT
PROCESSING PLANT

**STATEMENT OF EVIDENCE OF HYWEL DAVID EDWARDS (PLANNING AND
CONDITIONS) ON BEHALF OF AFFCO NEW ZEALAND LIMITED**

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TABLE OF CONTENTS

INTRODUCTION	2
EXECUTIVE SUMMARY	2
QUALIFICATIONS AND EXPERIENCE	3
BACKGROUND AND ROLE	4
SCOPE OF EVIDENCE	4
THE PROJECT	5
THE SITE AND ENVIRONMENT	7
RESOURCE CONSENTS REQUIRED AND ACTIVITY STATUS	9
ASSESSMENT OF ENVIRONMENTAL EFFECTS	10
PLANNING FRAMEWORK	18
ISSUES RAISED BY SUBMISSIONS	29
RESPONSE TO COUNCIL REPORTS	29
RECOMMENDED RESOURCE CONSENT CONDITIONS	30
DURATION OF CONSENTS	30
PART 2 ASSESSMENT	35

INTRODUCTION

1. My name is **Hywel David Edwards**.
2. I am an Associate Planner with Beca Limited ("**Beca**").
3. My evidence is given in relation to the resource consent application lodged in March 2016 by AFFCO New Zealand Limited ("**AFFCO**") in relation to discharges from AFFCO's meat processing plant at Feilding - the "**Project**".

EXECUTIVE SUMMARY

4. After reviewing the resource consent application, assessments of environmental effects, further information requests, submissions, Section 42A Reports and evidence, I am of the opinion that the Project will promote the sustainable management of natural and physical resources. I am of this opinion because:
 - (a) there are significant positive effects resulting from the Project, being:
 - (i) enabling the people and communities of Feilding, the district and region to provide for their economic and social well-being employment;
 - (ii) avoiding discharges below median flow and shifting the bulk of the discharge volume to above median flow, and in particular above the 20th Flow Exceedence Percentile ("**20 FEP**"). This discharge regime will result in a reduction of effects of the proposed discharge on in-stream dissolved nutrient concentrations (DRP and SIN) by 87% less than that under the current operations, despite an allowance for a 20% increase in production; and
 - (iii) an increase in plant production that will enable increased employment and certainty as to the future operation of the plant, while significantly reducing the environmental effects of the current discharges.
 - (b) adverse effects have been avoided, remedied or appropriately mitigated, including through the design of the Combined Land And Water Discharge ("**CLAWD**") regime, and by the conditions attached to my evidence;
 - (c) the Project is consistent with the relevant national and regional statutory planning policy framework;
 - (d) the iterative process through which AFFCO has navigated (as described in the evidence of **Mr Hamish Lowe**) to reach its preferred

option is a Best Practicable Option process (“**BPO**”). This process has included;

- (i) looking at alternative treatment options;
 - (ii) evaluating internal plant operations to minimise water usage and waste production; and
 - (iii) developing a wastewater and water balance model to represent a range of options and discharge regimes.
- (e) relevant matters of national importance have been recognised and provided for under Section 6;
- (f) particular regard has been had to relevant other matters under Section 7; and,
- (g) the principles of the Treaty of Waitangi have been taken into account under Section 8.

QUALIFICATIONS AND EXPERIENCE

5. I have 14 years of experience in the planning profession. I have worked for both local and central government in the United Kingdom and private consultancy firms in New Zealand. I have worked in New Zealand since 2006.
6. I have the following qualifications from the University of Wales, Cardiff relevant to the evidence I shall give:
- (a) Bachelor of Science (Hons) in City and Regional Planning (2000); and
 - (b) Diploma in Town Planning (2002).
7. I have been a full member of the New Zealand Planning Institute since 2008.
8. I have assisted a range of clients with resource management related tasks involvement wastewater schemes. This has included undertaking feasibility studies, scoping resource consent requirements, assisting with consultation initiatives, preparing resource consent applications, co-ordinating assessment of environmental effects and preparing statutory assessment reports. My experience has included assisting municipal wastewater related projects in the Manawatu-Wanganui Region.
9. I am familiar with the regional level planning document in effect within the Manawatu-Wanganui Region – the operative One Plan.

10. I confirm that I have read the 'Code of Conduct' for expert witnesses contained in the Environment Court Practice Note 2014. My evidence has been prepared in compliance with that Code. 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.

BACKGROUND AND ROLE

11. At the request of AFFCO, I have been involved in the Project since early September 2016. In determining my own ability to be able to prepare planning evidence on behalf of AFFCO (i.e. to the extent that I can support the position), and subsequently in preparing my evidence, I have read:
 - (a) the resource consent application and assessment of environmental effects, dated 30 March 2015;
 - (b) the further information request from the Manawatu-Wanganui Regional Council dated 29 April 2015 (email);
 - (c) the further information response from Lowe Environmental Impact dated 29 May 2015;
 - (d) a summary of submissions received on the application;
 - (e) the Section 42A Reports prepared on behalf of the Manawatu-Wanganui Regional Council by Tabitha Manderson (planning), Mr Logan Brown (water quality); Mr Jonathan Bell (overland flow system); Mr David Horne (soil properties and risk of surface nutrient leaching); Mr Neil Thomas (hydrology); and Mr Stuart Standen (compliance); and
 - (f) the evidence prepared on behalf of AFFCO by:
 - (i) Mrs Ann Nuku;
 - (ii) Mr Peter Hill;
 - (iii) Dr Olivier Ausseil; and
 - (iv) Mr Hamish Lowe.
12. Due to the limited time in which I have been involved in the Project, I have not yet been able to undertake a site visit to either the AFFCO Manawatu Plant or the discharge location(s). I am scheduled to undertake a site visit over the coming weeks, prior to the scheduled hearing. In the event statements or opinions in my evidence change as a result of my site visit, I will provide clarity on these matters in supplementary evidence or at the hearing.

SCOPE OF EVIDENCE

13. My evidence addresses the following matters:

- (a) a brief description of the Project;
- (b) a brief description of the site and environment;
- (c) a summary of the resource consents required from the Regional Council to implement the Project;
- (d) an assessment of environmental effects of the Project;
- (e) an assessment of the Project against the planning framework;
- (f) a response to council reports (noting that I have sought to raise issues through the body of my evidence);
- (g) an assessment of recommended resource consents conditions;
- (h) duration of consents; and
- (i) an assessment under Part 2 of the RMA.

THE PROJECT

- 14. To avoid repetition with other reports and evidence, I have refrained from describing the Project and proposed activities in any depth. In broad terms, the Project seeks to change the current discharge regime to deliver a more sustainable discharge solution with a lesser environmental impact compared to the current discharge regime. The key differences from the current and proposed regime are detailed in the evidence of **Mr Hamish Lowe**.
- 15. The Project as proposed seeks to manage wastewater from the AFFCO Manawatu Plant once it has been through a treatment pond system using a Combined Land And Water Discharge system (“**CLAWD**”). This will entail use of the following wastewater management options:
 - (a) discharge it to land;
 - (b) discharge it to surface water (via an overland rock filter); and
 - (c) store it until such time as it can be discharged to land or water at a later time.

Discharge to Land

- 16. The land application (irrigation) activity involves the use of irrigation infrastructure to apply wastewater at a controlled rate onto farm land on the application site which consists of AFFCO owned property plus neighbouring properties. Land application will occur when soil conditions are conducive to retaining the applied wastewater without ponding, run-off or leaching into groundwater.
- 17. The area of suitable and available land for irrigation is 133ha which is made up of the Byreburn property (119.6ha), 4.2ha of a second neighbouring

property and 9.2ha of AFFCO owned land. The irrigable area represents an increase over the current irrigation area of 96ha.

18. The irrigable areas are divided into 4 Land Management Units (LMUs) with each LMU exhibiting different soil and management characteristics, and resulting loading rates. These are summarised in Table 5.3 of the resource consent application, and also discussed in the evidence of **Mr Hamish Lowe**.

Discharge to Water

19. A discharge to surface water has been an historical feature of the AFFCO Manawatu Plant operations, and is proposed to continue as part of the Project, albeit the continuance will differ from the current regime. These differences are described in the evidence of **Mr Hamish Lowe**, but in broad terms they avoid discharges below median flow and shift the bulk of the discharge volume to above median flow and in particular above the 20 FEP.
20. The discharge to surface water activity will avoid discharges during lower flows where the river is more susceptible to adverse effects associated with contaminant discharges. A key focus in the design of the regime is to meet One Plan water quality 'targets' or satisfy the One Plan objectives in relation to targets not met by moving towards the target. A summary of the proposed river discharge regime is provided below in Table 1.

Table 1: Proposed River Discharge Regime

Discharge criteria	Date Range	
Flow: Oroua River@Kawa Wool	1 December – 31 March (Summer)	1 April – 30 November (Winter)
Below median flow (0 – 7,590 L/s)	No discharge	No discharge
Median flow to 20 th flow exceedance percentile (7,590 – 16,193 L/s)	No discharge	Discharge at rate based on DRP load to the river up to a maximum of 3,000 m ³ /day.
Above 20 th flow exceedance percentile (>16,193 L/s)	No discharge*	Up to 3,000 m ³ /day.
* Contingency above 3 x median (>20,913 L/s)	If land application is not possible and pond is 100 % full then up to 2,000 m ³ /day.	N/A

21. The current surface water discharge from the AFFCO Manawatu Plant is via a pipe which discharges into the Otoku Stream. The Project proposes to introduce an overland flow system (rock rip rap) on the true left bank of the Oroua River. The system will incorporate fish passage.

Wastewater Storage

22. The AFFCO Manawatu Plant includes two treatment ponds and two additional ponds used for storage. There is an overall storage capacity of 64,500m³. I understand this capacity represents 92 days production at an annual kill rate of 100,000 or 76 days production at a kill rate of 120,000. The ponds (treatment and storage) are clay lined as opposed to synthetically lined, and will continue to be used as part of the Project.

THE SITE AND ENVIRONMENT

23. The application site and receiving environment is described in the resource consent application¹. For brevity, I refrain from repeating that description in my evidence.
24. An aerial photograph of the site, the location of the effluent ponds and proposed land application areas are illustrated in Figure A of the resource consent application².

One Plan Values

25. The operative One Plan 2014 identifies Water Management Zones as a means of managing water quality within the region. The proposed discharge location is located within the Oroua (Mana_12) Water Management Zones as delineated by the One Plan, and within the Middle Oroua (Mana_12b) sub-zone. I note **Ms Manderson** identifies it as within the Oroua (Oroua_12) Water Management Zone and the Middle Oroua (Oroua_12b) sub zone. This appears an administrative error as opposed to a different zone(s) applying to that which I identify as being applicable.
26. In 'Schedule B', the One Plan identifies values for the respective Water Management Zones and sub-zones. The values associated with the zones applicable to the surface water discharge location are those identified in Table 2 below.

¹ Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Section 4, pages 10 – 20.

² Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Section 1.2, page 5.

Table 2: One Plan Schedule B Values

Zone Wide Values	Reach Specific Values
<ul style="list-style-type: none"> ■ Life supporting capacity – Hill Country mixed geology ■ Aesthetics ■ Contact Recreation ■ Mauri ■ Industrial Abstraction ■ Irrigation ■ Stockwater ■ Existing Infrastructure ■ Capacity to assimilate pollution 	<ul style="list-style-type: none"> ■ Site of Significance – Riparian (400m downstream of discharge point) ■ Amenity ■ Trout Fishery (other) ■ Domestic food supply ■ Water supply ■ Domestic Food Supply ■ Flood Control and Drainage

27. I note the values identified in Table 2 above are consistent with those identified by **Mr Logan Brown** in his Section 42A Report.³

Existing Environment

28. **Mr Logan Brown's** Section 42A Report⁴ provides a description of the Oroua River, the One Plan Water Management Zones and sub- Zones, Schedule B values and Schedule E water quality targets applicable to the area. I note **Mr Brown's** description is consistent with **Dr Ausseil's** understanding and knowledge of the area and the One Plan framework.

29. **Dr Ausseil** notes that from a technical point of view, different Schedule E targets in the One Plan were identified for different reasons. He provides a number of examples in this context:

- (a) some targets were on defined as 'State of the Environment' targets;
- (b) some targets directly relate to (i.e. a measure of) the state of a given river value e.g. visual water clarity and periphyton cover directly relate to aesthetic and recreational values of the river; and,
- (c) by contrast, some targets such as DRP, SIN, ScBOD₅ or POM were defined as a means to control other factors that directly relate to management values (e.g. those listed above). From a technical point of view, **Dr Ausseil** notes that in-stream nutrient (DRP and SIN) targets were defined in the One Plan primarily as a means to control periphyton growth in rivers, rather than as an end by themselves.

30. As noted in the evidence of **Dr Ausseil**, the above commentary has relevance to the decision to apply different targets in different contexts, including resource consent conditions.

³ Section 42A Report – Mr Logan Brown – Section D, paragraph 12, pages 6 and 7

⁴ Section 42A Report – Mr Logan Brown – Section D, paragraphs 8 – 15, pages 5 - 14

RESOURCE CONSENTS REQUIRED AND ACTIVITY STATUS

Resource consent history and right to continue to operate (discharge)

31. AFFCO currently operates the Manawatu Plant (“**AFFCO Manawatu**”) under a suite of resource consents as detailed in the resource consent application⁵.
32. I understand that AFFCO has retained the right to continue operating under its current consents until the suite of consents for the Project are determined and all appeals resolved⁶. In my opinion, AFFCO have retained the right to continue the operation (discharge) until the current suite of replacement consents are determined and all appeals resolved.
33. I note that **Ms Manderson** does not appear to address Section 124 in her Section 42A Report, nor the implications of this section applying in relation to considering the application under Section 104(2A) – the value of investment.

Resource consent requirements for the Project

34. AFFCO require resource consents from the Regional Council to establish and operate the Project. The consents as sought are summarised in Table 3 below.

Table 3: Resource consents sought by AFFCO for the Project

Rule	Activity	Term Sought	Activity Status
Replacement Consents			
Rule 14-30	Discharge of treated meatworks effluent and associated solids and sludges to land	35 years	Discretionary
Rule 15-17	Discharge of odours and aerosols to air arising from the discharges to land	35 years	Discretionary
Rule 14-30	Discharge of treated meatworks effluent to ground water by seepage from wastewater treatment ponds	35 years	Discretionary
Rule 14-30	Discharge of treated meatworks to the Oroua River	35 years	Discretionary
Rule 17-15	Construction of a discharge structure and bed level control structure in the bed and banks of the Oroua River and its unnamed tributary.	35 years	Discretionary

35. The consents sought from the Regional Council will replace existing resource consents which I understand are currently being exercised under Section 124 of the RMA.
36. In my opinion, the activities being assessed as part of this application are inextricably linked. To that extent, the consents should be bundled together. The overall activity status for the Project is discretionary. I note **Ms**

⁵ Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Section 3, pages 7 - 9.

⁶ Section 124 of the Resource Management Act 1991

Manderson agrees with this overall activity status in her Section 42A Report⁷.

37. I am not aware of any additional resource consents or other approvals that would be required over and above those sought to establish and operate the Project under the One Plan.

ASSESSMENT OF ENVIRONMENTAL EFFECTS

38. In assessing the environmental effects of the Project, I have considered the environmental effects assessments and mitigation information detailed in the resource consent application⁸, the initial technical assessments relating to discharge to land effects and water quality effects for the Project⁹, the further information provided by AFFCO, the Cultural Impact Assessment prepared on behalf of Ngati Kauwhata and evidence prepared by expert witnesses appearing on behalf of AFFCO. I have also read the Section 42A Reports prepared on behalf of the Regional Council.
39. Based on my own overall assessment, I am of the opinion that the adverse effects will be remedied or appropriately mitigated via design or measures proposed to be implemented through the proposed conditions. Where adverse effects have been identified, measures are proposed (primarily to be given effect through conditions) to remedy or mitigate the adverse effects to an acceptable level.
40. In addition, and noting that **Ms Manderson** addresses positive effects of the Project in two short sentences¹⁰, it is my opinion that the ongoing positive effects of this Project will be significant. I comment on positive effects of the Project below.
41. Below, I summarise my key conclusions on the effects of the Project. The Section 42A Report prepared by **Ms Manderson** also comments on these effects. While I note I have a large measure of agreement with **Ms Manderson's** Section 42A Report with respect to the assessments of effects, a number of issues appear to remain outstanding, being:
- (a) the adoption of the Best Practicable Option ("**BPO**");
 - (b) wastewater pond leakage and uncertainties as to effects;
 - (c) cultural effects; and,
 - (d) consent terms in respect of the discharge permits sought.

⁷ Section 42A Report, Section L, paragraph 120, page 22

⁸ Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Sections 8 and 9.

⁹ Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Appendices F and G.

¹⁰ Section 42A Report, Section I, paragraph 77, page 16.

Positive effects

42. It is my opinion that when assessing the effects of an activity on the environment, there can be a tendency to focus on the negative or adverse effects. However, effects include positive effects. In my opinion the positive effects of this Project are significant and should not be understated.
43. In my opinion, the key positive effects of the Project are:
 - (a) enabling the people and communities of Feilding (and surrounds) to provide for their economic and social well-being through employment. The AFFCO Manawatu Plant is, and has long been, a source of employment for the community of Feilding and wider region;
 - (b) avoiding discharges below median flow and shifting the bulk of the discharge volume to above median flow, and in particular above the 20th Flow Exceedence Percentile (“**20 FEP**”). This discharge regime will result in a reduction of effects of the proposed discharge on in-stream dissolved nutrient concentrations (DRP and SIN) by 87% less than that under the current operations, despite an allowance for a 20% increase in production; and,
 - (c) an increase in plant production that will enable increased employment and certainty as to the future operation of the plant, while significantly reducing the environmental effects of the current discharges.
44. The evidence of **Mrs Nuku** explains:
 - (a) that the AFFCO Manawatu Plant directly employs 380 people and in addition contracts in considerable contractor work;
 - (b) that the AFFCO Manawatu Plant’s estimated value is \$130M and it is one of the most modern processing plants in the southern hemisphere; and,
 - (c) the significance of the red meat sector to the region's economy and its potential for future growth, as per the Growth Study.
45. As explained in **Mrs Nuku's** evidence, the Growth Study importantly sets the context of the limited growth in the region and the pressures the region faces (i.e. with GDP 23% below the national average).
46. The positive effects of the Project are aligned with the opportunities identified in the Growth Study. While I am not an economic expert, it would appear the loss or reduction of employment and income from the AFFCO Manawatu Plant would be a significant adverse effect for the district and wider region. I note that **Mrs Nuku** highlights that this resource consent process has a real and direct impact on the viability of the AFFCO Manawatu Plant.

47. I note **Ms Manderson** identifies the Growth Study as a relevant ‘other matter’ in her Section 42A Report.¹¹

Effects on soils (discharge to land activity)

48. The effects from the proposed land application activity (irrigation) are outlined in Section 5 of the resource consent application and AEE, including Appendix E. The land application activity will be managed via Land Management Units 1 – 4 as detailed in Table 5.3 of the application.
49. The evidence of **Mr Hamish Lowe** assesses the effects of the land application activity and concludes that the effects of the activity, inclusive of wastewater and solids, will have a no more than minor impact on the receiving environment, with a nutrient and hydraulic loading typical of comparable dairy farms in the area.
50. While noting what appears to be an inconsequential difference of opinion in respect of leaching loss¹², I note that **Dr Horne’s** Section 42A Report concludes that most of the potential effects of the discharge to land activity will be adequately managed by systems proposed by AFFCO.
51. Based on the evidence presented by **Mr Lowe** and the Section 42A Report from **Dr Horne**, I am of the opinion that the discharge to land component of the Project is sound and that the adverse environmental effects will be no more than minor, subject to the imposition of consent conditions which will include a management plan.
52. I note **Ms Manderson** draws a similar conclusion in her Section 42A Report in respect of discharge to land effects¹³.

Effects on groundwater (pond seepage)

53. The resource consent application and AEE discusses effects on groundwater from pond seepage in Sections 5.6 and 8.5. **Mr Hamish Lowe** also addresses the effects of pond seepage on groundwater in his evidence. **Mr Lowe** describes that the ponds have been in place for over 40 years, and that sludge build up will have contributed to reducing leakage by blocking pore spaces in the clay substrate.
54. However, there remains a degree of uncertainty as to the level of pond leakage. **Mr Lowe** comments that leakage in the order of 1×10^{-8} m/s is ‘more realistic’ compared to claiming a lesser (or greater) leakage rate. This means that losses in the order of $50 \text{ m}^3/\text{d}$ are feasible. For comparative purposes, the permitted (and controlled) activity threshold for seepage rates adopted by Horizons is 1×10^{-9} m/s¹⁴.

¹¹ Section 42A Report – Ms Manderson – Section M, paragraph 147, page 26

¹² The application predicts leaching loss in the order to 21kg/ha/year whereas Dr Horne considers it to be more in the order of 5kg/ha/year.

¹³ Section 42A Report – Ms Tabitha Manderson – Section I –paragraph 765, page 14

¹⁴ One Plan, Chapter 14 Discharges to Land and Water - Permitted Activity Rule 14-6, Controlled Activity Rule 14-11 and Permitted Activity Rule 14-16.

55. I note that **Mr Thomas'** Section 42A report challenges the seepage rate assessed by AFFCO and that he considers a higher seepage rate is likely (200 m³/d). However, he also discusses the interpretation of bore sample results and observes that there is no obvious evidence of widespread contamination spreading beyond the storage ponds, but there are clear effects immediately around the ponds. **Mr Brown's** Section 42A Report also considers **Mr Thomas'** Section 42A Report and notes that while the potential contribution from seepage from the ponds reaching the Oroua River is relatively small, it does add to the cumulative effect. Neither **Mr Thomas** nor **Mr Brown** identify any significant groundwater / surface water effects or impacts as a direct result of pond seepage.
56. I note this overall conclusion is consistent with the evidence of **Mr Lowe** and **Dr Ausseil**. Based on the evidence before me, including the fact that the ponds have been in operation for ~40 years, I therefore am of the opinion that there is no significant groundwater / surface water effect or impact occurring as a direct result of pond seepage.
57. From an effects perspective, seepage from the AFFCO ponds appear acceptable. In the context of cumulative effects, and from a 'whole of Project' perspective, the Project meets the One Plan objectives of improving water quality where any targets are not met by reducing effects of the proposed discharge on in-stream dissolved nutrient concentrations (DRP and SIN) by 87% less than that under the current operations.
58. Consistent with the evidence of **Mr Lowe**, I am of the opinion that further monitoring can assist in determining the extent of seepage effects from the ponds. I consider this can be addressed through monitoring conditions as recommended in my evidence. To be clear, I do not see the uncertainties raised in the context of pond seepage as a reason why a short term consent is appropriate, but rather that monitoring will provide certainty and allows mitigation to be implemented and targeted if needed at all. The evidence before me indicates the effects from pond seepage are acceptable.
59. I also note, as identified in **Mr Lowe's** evidence, that there is the potential for other contributors to contaminants in groundwater. Consequently, should a need for mitigation be required, it should to be targeted to the source of contamination. **Mr Lowe** identifies that the mitigation of pond lining is expensive and if to be implemented there needs to be the confidence it will result in improvements in the environmental effects, should there be environmental effects requiring mitigation.

Effects on surface waters (Oroua River)

60. The resource consent application and AEE discussed effects on surface water quality in Section 5.7 and Appendix G. Appendix G outlines an assessment of the current effects of the discharge, undertakes modelling for

the proposed discharge regime under different scenarios and discusses effects against the One Plan water quality targets.

61. In assessing the effects of the Project on surface water, the evidence of **Dr Ausseil** predicts the proposed discharge regime will:
- (a) result in an ~8% increase of the total volume of effluent and the total load of contaminants discharged to the river compared with the 'current' scenario. However, **Dr Ausseil** notes the timing of the discharges to the river is different in the two scenarios with the Project proposing a complete elimination of the discharge to the river at flows below 7.950 l/s (10% above median flow). Dr Ausseil notes the proposed discharge regime also results in significant reduction in the proportion of effluent and contaminant loads discharged to the river at flows below 20FEP (or as referred to by **Dr Ausseil** as 'Q20');
 - (b) cause lesser effects on water clarity and on concentrations of ScBOD₅, POM, total ammonia-nitrogen and *E.coli* than the 'current' scenario'. Thus, **Dr Ausseil** does not expect the discharge to result in any significant adverse effects associated with these water quality determinands;
 - (c) result in the effects of the 'proposed' discharge on average in-stream nutrient (DRP and SIN) concentrations (<Q20) to be 87% less than under the 'current' scenario. Dr Ausseil notes that on a monthly basis the improvements under the proposed scenario are greatest during April and May (93% and 94% respectively) and that resultant effects are unlikely to be detectable;
 - (d) cause less periphyton growth related effects compared with the current discharge. **Dr Ausseil** predicts periphyton biomass to be in the order of 0 to 4%. Considering the April – May period specifically, the average biomass is predicted to increase by 3.2% between upstream and downstream, with the peak biomass expected to increase by 0.1%. **Dr Ausseil** notes that such increases are unlikely to be detectable, and furthermore the risk of the proposed discharge causing a significant increase in periphyton growth to the point it exceeds One Plan targets is relatively low; and,
 - (e) significantly reduce the level of effects currently measured (on a single set of data) with respect to macroinvertebrate communities; and,
62. With regards to the cumulative effects of the AFFCO and Feilding WWTP discharge on nutrient concentrations and loads, **Dr Ausseil** concludes:
- (a) With regard to SIN, the combined predicted effects of the two discharge regimes on in-river SIN concentrations is 0.168 g/m³, i.e. approximately 38% of the One Plan target, as opposed to 0.552 g/m³

(120% of the One Plan target currently). The SIN concentration downstream of the Feilding WWTP is predicted to be 0.426 g/m³, i.e. marginally less than the One Plan target of 0.444 g/m³; and,

- (b) With regard to DRP, the concentration increase caused by the two discharges under the “proposed” discharge regimes is of the order of 0.003 g/m³ (33% of the OP target) as opposed to 0.012 g/m³ (120% of the One Plan target) under the current scenarios. Dr Ausseil predicts the DRP concentration downstream of the Feilding WWTP will be 0.013 g/m³ (as opposed to 0.010 g/m upstream), i.e. still exceeding the One Plan target but less than it currently is upstream of the Feilding WWTP discharge.

63. Overall, **Dr Ausseil** concludes that the Project is acceptable in respect of effects associated with discharges to surface water. He recommends robust monitoring as outlined in his evidence and I agree with his approach.

Effects on air quality – odour and aerosols

64. The resource consent application and AEE discusses effects on air quality in Section 8.10. The application concludes that the effects of the land application (irrigation) activity will have effects parallel to those of farm diary effluent discharges. As explained in the evidence of **Mr Lowe**, the Project includes the implementation of operation protocols for decision-making with regards to land application (irrigation). This, along with the imposition of buffer distances from sensitive receivers, will ensure potential effects on air quality will be no more than minor.
65. I note **Ms Manderson** draws a similar conclusion in her Section 42A Report in respect of effects on air quality¹⁵.

Effects on cultural and heritage values

66. The resource consent application discusses effects on cultural and heritage values in Section 8.9. Page 80 of the resource consent applications details consultation undertaken prior to lodging the resource consent application and I note this includes 10 separate meetings with Ngati Kauwhata between 29 July 2010 and 8 January 2015. I understand that Ngati Kauwhata has identified itself as Tangata Whenua with the primary kaitiaki role in the Feilding locality which includes the AFFCO Manawatu Plant and the Oroua River.
67. Submissions have been received from Ngati Kauwhata as well as Rangitaane and Ngati Whakatere. In broad terms, these submitters raise concerns with respect to cumulative effects of the proposed discharges, the quality of the Oroua and Manawatu River (and marine environment), impacts on fishing productivity and consultation (lack of).

¹⁵ Section 42A Report – Ms Tabitha Manderson – Section I –paragraph 73, page 15

68. In February 2016, a Cultural Impact Assessment (CIA) was prepared on behalf of Ngati Kauwhata in respect of the application. The CIA identifies 3 broad concerns, being recreational prohibitions, absence of fish life and impacts on cultural integrity. It essentially recommends that AFFCO consider options and alternatives to provide for 100% discharge to land and suggests an appropriate consent term is 10 years. I address the issue of term later in my evidence.
69. **Dr Ausseil** comments on the CIA from a water quality perspective. He notes that the data used (2005, 2006 and 2007 report) may not be representative of the current condition of the Oroua River and notes that significant changes in water quality have occurred since 2007. **Dr Ausseil** also comments on conclusions reached in the CIA report on the 2014 Aquanet modelling report, and that some of these conclusions are incomplete or taken out of context, and furthermore, he notes that the effects of the discharge on macroinvertebrate communities cannot be directly modelled.
70. I understand that AFFCO has discussed various aspects of the Project with Ngati Kauwhata prior to lodgement of the application. This has resulted in the following features which now form part of the Project:
- (a) development of solutions to separate the discharge from the Otoku Stream;
 - (b) planting of the stream and river banks through the AFFCO property;
 - (c) provision for a fish passage structure at the confluence of the Otoku Stream and Oroua River; and
 - (d) provision of an overland flow feature in the discharge to river structure. The overland flow system is reflective of the 'alternative system' that mitigates the adverse effects on the mauri of the receiving water body as directed by Policy 5-11 of the One Plan. While this policy is relevant only to human sewage discharges, it has been adopted by AFFCO for the Project and will, in my opinion, assist with mitigating effects on the mauri of the receiving waters.
71. In addition to the above, the Project enhances water quality to the extent that it avoids discharges below median flow and shifts the bulk of the discharge volume to above median flow, and in particular above the 20 FEP.
72. Furthermore, following review of the CIA and submissions received, AFFCO has 'offered up' resource consent conditions which I recommend as part of my evidence related to:
- (a) a 5 yearly investigative process whereby AFFCO will investigate the potential to apply more wastewater to land. This will involve direct consultation with Ngati Kauwhata and Rangitaane; and
 - (b) Cultural Health Index Monitoring for Ngati Kauwhata and Rangitaane.

73. Based on the above, and while not avoiding or mitigating all of the issues raised in submissions and the CIA from a cultural perspective, I consider the effects on cultural values and heritage to be acceptable, and certainly an improvement over the current situation. Further, there is an ongoing opportunity through investigations and dialogue to further mitigate cultural effects.

Effects on river bed and banks and flood control infrastructure

74. The resource consent application and AEE discusses effects on the integrity and functionality of river control works in the area in Section 8.8. I note that prior to lodging the resource consent, AFFCO discussed the proposed structure with Regional Council.
75. I understand that **Mr Bell** advised AFFCO on behalf of the Regional Council, and that his recommendations pertaining to the proposed structure have been adopted. Consequently, I understand that subject to the imposition of consent conditions, **Mr Bell** has raised no concerns with the proposed river discharge structure.
76. Subject to the imposition of consent conditions, I consider that the effects of the proposed river discharge structure on the river bed and banks and existing flood control infrastructure will be no more than minor.

Summary of actual and potential effects on the environment

77. No experts have identified unacceptable environmental adverse effects of the long running current operation which is inclusive of pond seepage, irrigation and surface water discharge. Despite no unacceptable effects being identified, AFFCO are proposing to make changes to further lessen their impact and I consider these changes mitigate many of the adverse cultural effects as raised by submitters.
78. In regards to these changes, there appears to be general agreement between experts who have prepared the Section 42A Report and evidence on behalf of AFFCO that the Project represents an improvement in the context of effects compared to current operations.
79. I acknowledge that some uncertainties exist in respect of pond seepage, but note that the resultant effects (based on current knowledge) are not significant. Further monitoring and management will assist to confirm the extent of contamination and identify if there is a need to reduce or mitigate any more than minor adverse environmental effects.
80. Based on the evidence before me, I am of the opinion that the Project will:
 - (a) generate significant positive effects in respect of enabling people to provide for their economic and social well-being through employment and enhancing water quality overall by avoiding discharges below

median flow and shifting the bulk of the discharge volume to above median flow, thereby reducing effects; and

- (b) avoid, remedy or mitigate adverse effects through design and by the conditions annexed to my evidence to the extent that those residual effects are acceptable.

PLANNING FRAMEWORK

National Environmental Standards

- 81. In my opinion, the applicable NES for the Project is that identified and assessed as part of the application – the NES for Sources of Human Drinking Water Regulations which came into effect on 20 June 2008.
- 82. Regulations 7 and 8 prohibit regional councils from granting discharge permits for discharges upstream of abstraction points for drinking water in certain circumstances.
- 83. As detailed in the resource consent application¹⁶, there are no known abstractions of human drinking water from the Oroua River downstream from the proposed discharge location(s). On this basis, my opinion is the Project will not be contrary to the NES for Sources of Human Drinking Water. I note **Ms Manderson's** Section 42A Report reaches a similar conclusion¹⁷.

National Policy Statements

NPS for Freshwater Management 2014

- 84. The National Policy Statement for Freshwater Management (“NPS – Freshwater”) came into effect on 1 August 2014. The NPS – Freshwater outlines a number of national values of freshwater, where water is valued for a series of uses, including the cleaning, dilution and disposal of waste. It also lists a number of values that relate to recognising and respecting fresh water’s intrinsic values such as safeguarding the life supporting capacity of water.
- 85. Objectives A1 and A2 set out what the NPS – Freshwater is seeking to achieve. Decision makers must have regard to these objectives in making decisions.
- 86. In my opinion, the policies of the NPS – Freshwater are not to be directly considered in this consent process on the basis that:
 - (a) the preamble makes it clear that national bottom lines are not standards that must be achieved immediately;

¹⁶ Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Section 11.2.1 (incorrectly titled as National Policy Statement), page 63.

¹⁷ Section 42A Report – Ms Tabitha Manderson, Section J, paragraph 86, page 17

- (b) Policies A1 and A2 are clear that the freshwater objectives, established by regional councils under the process set out in Policies CA1 – 4, can only be applied through regional plans;
 - (c) pursuant to Policy A3, conditions on discharge permits developed through Policies A1 and A2 can only be imposed through limits and targets set in regional plans and not directly through resource consent conditions; and
 - (d) although Policy A4 provides for stated provisions to be directly included in regional plans, none of those provisions relate to water quality limits or targets.
87. Objective D1 applies to management of freshwater and decision making as opposed to consenting. Although Policy D1(c) requires local authorities to take reasonable steps to reflect tangata whenua values and interests in decision making, this must be read in light on what the policy is seeking to achieve – namely a focus on management and functions of regional councils and planning mechanisms, not consent processing.
88. Notwithstanding the above and the direct applicability to this consenting process, it is my opinion that with consent conditions imposed and adhered to, the Project is well aligned with the intent of the NPS – Freshwater. I note that **Ms Manderson**¹⁸ reaches a similar conclusion in her Section 42A Report.
89. Fundamentally, and based on the evidence provided by **Dr Ausseil** and **Mr Lowe**, I am of this opinion due to:
- (a) the Project meeting the One Plan water quality targets, and where the targets are not met (DRP and SIN), enhancing water quality via reducing DRP and SIN by 87%;
 - (b) pond seepage effects not being significant, and any discharge of pond seepage to the Oroua River has effects that do not lead to breaches of the periphyton target above the Fielding WWTP; and,
 - (c) ensuring that tangata whenua values and interests have been identified and reflected in the Project, and ultimately in the management of freshwater, by:
 - (i) holding a series of meetings with Ngati Kauwhata between 2010 and 2014 to better understand concerns, including the commissioning of a Cultural Impact Assessment in 2016;
 - (ii) initiating riparian planting on the AFFCO site;

¹⁸ Section 87F Report – Ms Tabitha Manderson, Section K, paragraph 90, page 17

- (iii) despite the policy requirement for it relating to human sewage (refer Policy 5-11 of the One Plan), introducing an overland flow system (rock rip rap) prior to the discharge to surface water occurring (inclusive of a fish passage);
- (iv) offering a 5 yearly investigation process with Ngati Kauwhata and Rangitaane as to the effects of pond seepage and potential remedial options to lessen effects, despite no significant effects being identified by any of the experts;
- (v) supports Ngāti Kauwhata and Rangitaane undertaking cultural health index monitoring.

Regional Policy Statement – One Plan

90. The One Plan is Regional Council’s combined Regional Policy Statement and Regional Plan. The One Plan was made fully operative on 19 December 2014. For brevity, I refer to what I consider are the most relevant RPS objectives and policies below, and I refrain from repeating the relevant objectives and policies. I note that Attachment 4 of **Ms Manderson’s** Section 42A Report includes the full text of all provisions that I reference below.

Chapter 2 – Te Ao Maori

91. In my opinion, and noting that Policy 2-1 is directed at the Regional Council as opposed to applicants, the relevant RPS Te Aro Maori Objectives and Policies that apply to the Project are Objective 2-1 and Policy 2-4.
92. Objective 1 requires that regard be had to the mauri of natural and physical resources to enable hapu and iwi to provide for their social, economic and cultural well-being, and furthermore that kaitiakitanga must be given particular regard and the relationship of hapu and iwi with water must be recognised and provided for. Policy 2-4 identifies resource management issues of significance to hapu and iwi. I note the relevant part of the One Plan where the respective issues are addressed under Policy 2-4 essential link to water quality provisions in Chapter 5 and discharge to land and water provisions in Chapter 14.
93. In my opinion, the Project has sought to involve iwi and hapu in the Project via direct consultation and the commissioning of a CIA. I understand that outcomes (some in-part) of this consultation and assessment include:
- (a) seeking to reduce direct discharge to surface water;
 - (b) introducing an overland flow system prior to discharge of wastewater into surface water, despite this being a requirement in the One Plan relating to the discharge of human sewage (refer Policy 5-11);
 - (c) riparian planting within the AFFCO site;

- (d) offering a 5 yearly investigation process with Ngati Kauwhata and Rangitaane as to the effects of pond seepage and potential remedial options to lessen effects, despite no significant effects being identified by any of the experts;
 - (e) supports Ngāti Kauwhata and Rangitaane undertaking cultural health index monitoring
94. It is clear from the CIA and submissions from iwi and hapu that there are cultural concerns with the Project. However, these concerns do not all appear to be 'fixable' as part of this consent process, but rather they align with a broader water management perspective to the catchment. These effects cannot all be avoided, remedied or mitigated via the Project. However, the Project does in my opinion contribute to meeting those objectives by 'doing its part'.
95. For these reasons, I consider that the Project is consistent with the intent of the Chapter 2 objectives and policies as referenced above.

Chapter 5 – Water

96. The objectives and policies contained in Chapter 5 of the RPS underpin key aspects of the Project, including water quality targets and discharges to land which may enter water. Objective 5-2(a) is of particular relevance and seeks to:
- (a) maintain water quality where existing water quality is sufficient to support values in Schedule B of the One Plan; and
 - (b) enhance water quality where existing water quality is not at a sufficient level to support values in Schedule B of the One Plan.
97. Objective 5-2 (b) applies a similar approach to groundwater i.e. that it is managed to ensure existing groundwater quality is maintained, or enhanced where degraded
98. There are 11 policies relating to water quality, of which I have identified the following of particular relevance to the Project.
99. Policy 5-1 identifies water management zones and values (linked to Schedule B values). Table 5.2 of the One Plan sets out the management objectives for individual values and this is important in respect of whether the objective relates to maintaining or enhancing that value. Not all values require enhancement.
100. Policy 5-2 sets water quality targets for each water management sub zone in Schedule E of the Regional Plan. The relevant water management zone for the Project is the Oroua (Mana_12) Water Management Zone and I have previously identified the values afforded to this management zone. The relevant sub-zone is the Middle Oroua (Mana_12b). This framework

essentially seeks to ensure the characteristics and values associated with the Water Management Zone are protected in a water quality perspective.

101. Policy 5-3 directs the management of water quality so that where targets are met, compliance with those targets is continued. Policy 5-4 directs the management of water quality so that where targets are not met, water quality must be managed in a manner that enhances existing water quality in order to meet:
 - (a) the water quality target for the Water Management Zone in Schedule E; and / or
 - (b) the relevant Schedule B Values and management objectives that the water quality target is designed to safeguard.
102. On balance I consider the Project is consistent with Policies 5-3 and 5-4 in relation to the direct discharge to water. I note that the One Plan target relative to DRP is only just met or marginally exceed upstream of the AFFCO discharge, and largely exceeded downstream, with further increases downstream of the Feilding WWTP and at Awahuri Bridge. Further, the One Plan target relative to SIN is met upstream of AFFCO and either met or marginally exceeded below the AFFCO discharge.
103. I note **Dr Ausseil** concludes there is no evidence of a significant periphyton issue at either Almadale (i.e. 11 km upstream of AFFCO) or upstream of Feilding WWTP (i.e. 2 km downstream of AFFCO). There is evidence of some exceedances of the One Plan targets downstream of the Feilding WWTP, and at Awahuri Bridge. He understands the effects of primary concern appear to be associated with cumulative effects downstream of the Feilding WWTP, rather than direct effects from the AFFCO Manawatu Plant.
104. Where water quality targets are not met, the Project reduces effects compared with those from the current discharge, thereby enhancing water quality.
105. Policy 5-6 is relevant and directs that discharges and land use activities should maintain or enhance (where degraded) groundwater quality (Policy 5-6(a)). Policy 5-6(b) provides an exception to requiring enhancement of degraded groundwater where a discharge to land better meets the purpose of RMA than a discharge to water, provided the best practicable option is adopted for the treatment and discharge system. In my opinion, and based on the evidence of **Mr Lowe**, the Project as a whole (as opposed to individually assessing components of that Project) is akin to the BPO, and furthermore the discharge to land (i.e. in this case into the treatment pond) better meets the purpose of the RMA than a discharge to water. The proposed changes to the irrigation system will lessen the impact it may have been having on groundwater and while there is some uncertainty about pond leakage, it is unclear if there is any impact beyond the property boundary.

106. Policy 5-9 directs that the management of point source discharges must have regard to the strategies for surface water quality management set out in Policies 5-3 – 5-5 while have regard to a range of matters as considered below:
- (a) the degree to which the activity will adversely affect Schedule B values for the Water Management Zone – in my opinion, the impact on Schedule B Values for the water management zone will be no more than minor.
 - (b) whether the discharge, in combination with other discharges, including non-point sources, will cause the Schedule E water quality targets to be breached – the evidence of **Dr Ausseil** states that some water quality targets are breached and that the AFFCO Manawatu Plant discharge may contribute to SIN exceedances downstream of the discharges. While breached, by reducing the contaminant loading in its discharge, the Project will enhance water quality as it relates to the exceeded determinands.
 - (c) the extent to which the activity is consistent with contaminant treatment and the discharge with best management practices – the level of treatment is not proposed to be improved although I note quality has been consistent as reported in **Mr Lowe's** evidence. I consider the CLAWD system represents a sound discharge regime;
 - (d) the need to allow reasonable time to achieve any required improvements to the quality of the discharge – I do not deem this relevant;
 - (e) whether the discharge is of a temporary nature or is associated with necessary maintenance or upgrade work and the discharge cannot practicably be avoided – I do not deem this relevant;
 - (f) whether adverse effects resulting from the discharge can be offset by way of a financial contribution set in accordance with Chapter 19 – I do not deem this relevant; and
 - (g) whether it is appropriate to adopt the best practicable option – taking a whole of Project approach, and based on the evidence of **Mr Lowe**, I consider the Project adopts the BPO.
107. Policy 5-10 relates to the management of point source discharges to land and therefore the proposed discharge to land activity (irrigation). Relying on the AEE and evidence of **Mr Lowe**, I understand the Project has been designed to sustainably irrigate wastewater to land in a way that will not result in the accumulation of toxic substances, will reuse nutrients and water, and will not exceed to water storage capacity of the soil. A management plan will manage on-site activities and conditions imposed (as attached to my evidence) will ensure the application of wastewater to land is appropriately

managed. I am of the opinion that the discharge to land activity will be consistent with Policy 5-10.

108. Policy 5-24 addresses activities in rivers and lakes and their beds with Schedule B Values for Flood Control and Drainage. I understand conditions recommended by **Mr Bell** in respect of avoiding and mitigating flood control and drainage effects have been adopted in full by AFFCO. On that basis, I am of the opinion that the Project will be consistent with Policy 5-24.
109. Overall, I consider that the Project is consistent with the objectives and policies in Chapter 5 of the RPS. This appears to be generally consistent with the conclusions in the Section 42A Report prepared by **Ms Manderson**.

Chapter 7 – Air

110. Objective 7-1 and Policies 7-1, 7-2 and 7-3 set out ambient air quality standards for the region and detail how discharges to air will be regulated. The resource consent application and AEE¹⁹ details that the discharge to land activities will be operated, and restricted, in such a manner so as to ensure that the regional standards are met at all times. I note that **Ms Manderson's** Section 42A Report agrees with this assessment²⁰, and furthermore the evidence of **Mr Lowe** asserts this to be the case.
111. In my opinion, the Project is consistent with Objective 7-1 and Policies 7-1, 7-2 and 7-3 of the One Plan. This is consistent with the s42A report of **Ms Manderson**.

Regional Plan – One Plan

Rules and Activity Status

112. I have confirmed my view of the applicable rules and activity status for the Project above in my evidence and do not repeat that view here.

Chapter 12 – General Objectives and Policies

113. Objective 12-2 and Policy 12-5 sets the framework for consent durations. I comment on this framework later in my evidence. Under this policy framework, and based on the merits of the Project, I consider a 32 year term is appropriate.

Chapter 14 – Land

114. Chapter 14 relates to discharge to land and water. Objective 14-1 outlines the management of the effect of discharges on surface and groundwater to provide for Schedule B values, provides for the objectives and policies of Chapter 5 of the One Plan, and to avoid, remedy or mitigate the effects of any discharge to water. Eight policies support the objective.

¹⁹ Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Section 11.3.2, page 72.

²⁰ Section 42A Report – Ms Manderson – Section K, para 119, page 22.

115. Policy 14-1 identifies matters to be considered when processing applications for the discharge of contaminants to water. The Project will improve water quality in the sense that it will avoid discharges below median flow and shift discharge to above median flow, and in particular above the 20FEP. This will reduce effects of the proposed discharge on in-stream dissolved nutrient concentrations (DRP and SIN) by 87% compared to that under the current operations, despite an allowance for a 20% increase in production.
116. Policy 14-2 identifies the matters to be considered when processing applications for the discharge of contaminants to land.
117. I understand the land application component of the Project is intended to achieve a reduction in effects on surface water and in this regard is consistent with Policies 14-1 and 14-2.
118. Policy 14-4 requires consideration of a range matters when applying for, and making decisions on, consent applications for discharges of contaminants into water or onto or into land. The policy requires the consideration of utilising alternative discharge options or a mix of discharge regimes for the purposes of mitigating effects. This includes applying the best practicable option, including but not limited to:
 - (a) discharging contaminants onto or into land as an alternative to discharging contaminants into water,
 - (b) withholding from discharging contaminants into surface water at times of low flow; and
 - (c) adopting different treatment and discharge options for differing receiving environments or at different times (including different flow regimes or levels in surface waterbodies).
119. The land discharge component of the Project (with storage) is the alternative to a total discharge to water. The river discharge component of the Project will be withheld during low flows between 1 December and 31 March, and at all other times of the year when the flow in the river is less than 10% above its median value of 7.59m³/s. I consider the proposed CLAWD regime is consistent with Policy 14-4.
120. Policy 14-8 sets out the monitoring requirements that generally should be implemented for point source discharges of contaminants to water. I understand telemetry is installed at the discharge location and that this will be continued (Policy 14-4(c)). Policy 14-4(d) makes mention of monitoring and reporting on the quality of the discharge before it enters surface water and the quality of the receiving environment upstream and downstream of the discharge point. The recommended conditions of consent attached to my evidence is consistent with this monitoring regime.

121. Overall, I consider that the Project is consistent with the objectives and policies of Chapter 14 of the Regional Plan. This is generally consistent with the Section 42A report of **Ms Manderson**.

Chapter 15 – Air

122. Objective 15-1 outlines matters relevant to the management of the region's air resources to enable their maintenance or enhancement. Subject to the implementation of management techniques regarding odour and aerosol control and with the imposition of consent conditions, I consider the Project will be consistent with Objective 15-1.
123. Policy 15-2 identifies matters to be considered by the Regional Council when processing applications for discharges of contaminants to air. Given the rural location of the site, existing land use and implementation of management techniques proposed and conditions recommended associated with discharges to air (associated with discharge to land and storage), I consider the Project will be consistent with Policy 15-2.

Section 104(1)(C) - other relevant matters

124. There are a number of other matters which I consider relevant to the consideration of this application. I set out these matters below.

Manawatu River Leaders Accord

125. I understand that the goal of the Manawatu River Leaders Accord is to improve the mauri (life force) of the Manawatu River catchment, such that it sustains fish species, and is suitable for contact recreation, in balance with the social, cultural and economic activities of the catchment community. I consider it is important to acknowledge the inclusion of economic activities in this goal, and recognise that AFFCO contributes to this aspect.
126. In June 2011, the Manawatu River Leaders Forum launched an Action Plan which details steps that will be taken to clean up the river. The Action Plan sets 6 key priorities and 130 specific actions to be taken by various members of the forum. I understand specific actions can be added over time.
127. I note that the Accord does not have any specific statutory weight. I understand that AFFCO is a signatory to the Accord and Action Plan, but that there are no specific actions which exist for AFFCO.
128. In my opinion, the Project aligns well with the intent of the Accord and what it seeks to achieve. By proposing to implement a CLAWD regime which overall, reduce the proportion of wastewater loads discharged at flows below the 20FEP. I consider that AFFCO have demonstrated a commitment to the Accord in that the Project will result in a better overall outcome in respect of

water quality in the receiving environment. This is generally consistent with the Section 42A report of **Ms Manderson**.

Manawatū-Whanganui Growth Study 2015

129. The Growth Study is addressed in the evidence of **Mrs Nuku**. It is a recent, Government funded, up-to-date study about the growth pressures currently faced by the region and the opportunities for the region. It recognises sheep and beef production and processing as one of the eight opportunities for the region's growth. It also recognises the pressures on the industry, including consolidation and the negative effects this could have on employment in the region.
130. I agree with **Ms Manderson** that the Growth Study is a relevant document for the hearing panel to consider.

Section 104(2A) value of investment

131. While not directly addressed in **Ms Manderson's** Section 42A Report, I consider that the applicant has retained the right to continue its current discharge regime. Consequently, the value of the investment made by AFFCO as the consent holder is to be had regard to in the consideration of this application in accordance with Section 104(2A) of the RMA.
132. As noted in the evidence of **Mrs Nuku**, the value of investment in the AFFCO Manawatu Plant is estimated to be \$130m. The value does not include the changes to the Plant as proposed in this application.
133. In my opinion, the value of this investment should not just be seen in monetary terms. The AFFCO Manawatu Plant is source of significant employment for many people in the district and region. To a large degree, it is from this employment that employees and the communities they live in have the ability to provide for their social well-being and health and safety.
134. **Mrs Nuku** addresses the vulnerability and uncertainty in the meat industry as a result of market pressures. Also, the Growth Study highlights to potential need for consolidation of meat processing facilities. These factors need to be considered in light of the implications of additional costs being imposed on the AFFCO Manawatu Plant, with costs increasing its vulnerability and putting in jeopardy the current investment and dependency that many local employees have on the plant.

Section 105 assessment of application

135. Section 105(1) of the RMA sets out matters a consent authority must have regard to when considering a resource consent application for a discharge permit, being:

- (i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects;
 - (ii) the applicant's reasons for the proposed choice; and,
 - (iii) any possible alternative methods of discharge, including discharge into any other receiving environment.
136. The resource consent application and the evidence of AFFCO's experts (**Mr Lowe, Mr Hill and Dr Ausseil**) consider the nature of the discharge and the sensitivity of the receiving environment to adverse effects. In my view, sensitivities of the receiving environment have been identified and taken into account from an effects perspective in the following ways:
- (a) Continuing and refining a CLAWD regime, resulting in the effects of the proposed discharge on in-stream dissolved nutrient concentrations (DRP and SIN) being reduced by 87% compared to that under the current operations; and
 - (b) adopting an 'over-land passage' system associated with the direct discharge to water to mitigate cultural effects, despite this policy directive in the One Plan (Policy 5-11) being related to the discharge of human waste.
137. **Mrs Nuku and Mr Lowe** comment on some of the reasons why AFFCO has chosen to make changes to enhance the current operations.
138. In respect of considering any possible alternative methods of discharge, including discharge into any other receiving environment, the process through which AFFCO has selected the discharge design is documented in the resource consent application²¹ and in the evidence of **Mr Lowe**. I am of the opinion that this process has sufficiently considered alternative methods for discharging wastewater from the AFFCO Manawatu Plant.
139. It is my view that the provisions of Section 105(1) have been addressed.

Section 107 Restrictions on grant of certain discharge permits

140. Section 107(1) sets out particular restrictions on the granting of discharge permits. Except as provided for by Section 107(2), a consent authority shall not grant consent for a discharge permit for a contaminant that would likely give rise to any of the following effects in the receiving waters:
- (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - (b) any conspicuous change in the colour or visual clarity;
 - (c) any emission of objectionable odour:

²¹ Application and Assessment of Environmental Effects, Meat Processing Plant Discharges for AFFCO NZ Ltd, LEI, Section 6, page 35.

- (d) the rendering of fresh water unsuitable for consumption by farm animals:
 - (e) any significant adverse effects on aquatic life.
141. Based on the evidence of **Dr Ausseil**, it is my view that the proposed activity is consistent with Section 107 of the RMA.
142. I note that **Ms Manderson** also concludes that the application is consistent with the provisions of Section 107 of the RMA, subject to the imposition of consent conditions²².

ISSUES RAISED BY SUBMISSIONS

143. I have read summaries of the submissions received and note that **Ms Manderson's** Section 42A Report provides a summary of those issues. I agree with the key point identified by **Ms Manderson** in her Section 42A Report.²³
144. The keys themes raised in submissions have largely been addressed in the effects section and planning framework assessment of my evidence.
145. I note that many submissions raise issues that are, in my view, wider regional planning matters, and have been addressed in the recently adopted One Plan. Such matters include a desire for a 100% discharge to land scheme as opposed to the ability to discharge wastewater to water where the proposal is consistent with One Plan water quality targets and objectives. While individual dischargers need to do their part, the appropriateness of water discharges within the region is a debate beyond these applications.

RESPONSE TO COUNCIL REPORTS

146. There appears to be a large degree of agreement between the Section 42A Report prepared on behalf of Horizons by **Ms Manderson** and my evidence. I note the key points of difference below.
147. In relation to the BPO process, my opinion is that this applies to the Project as a whole as opposed to a specific component of the Project. I consider the process described in **Mr Hamish Lowe's** evidence is akin to a BPO process. In particular, I understand the proposed regime is a result of significant background work to confirm the dual discharge approach, and then further refinement of the CLAWD system to maximise storage and minimise the effects of any surface water discharge.

²² Section 42A Report – Ms Tabitha Manderson – Section N, paragraph 170 – 172, page 30.

²³ Section 42A Report – Ms Tabitha Manderson – Section G, paragraph 25 onwards, page 7

148. In relation to pond seepage, no significant effects have been identified by any expert. Additional monitoring as recommended by **Mr Lowe** will assist with the identification of any effects attributable to the Project.
149. **Ms Manderson** does not draw a conclusion as to what an appropriate consent term is for the Project. I address this issue in a separate section of my evidence below.
150. I consider cultural effects and the relationship with iwi and hapu with water have been addressed, albeit their preference has not been satisfied. In my opinion, the Project is not able to address all cultural related effects which are present in the catchment. Where water quality targets are not met, the Project contributes to enhancing those determinands.
151. I note that the policy framework of the One Plan takes into account cultural values. Te Ao Maori Policy 2-4 in Chapter 2 of the One Plan (RPS) seeks to address issues raised by iwi and hapu (as part of the One Plan process) in the manner set out in Table 2.1 under Policy 2-4. Resource consent issues of significance related to mauri and manaaki whenua (nurturing the land), essentially links many of those cultural issues back to water quality provisions in Chapter 5 (Water) and Chapter 14 (Discharges to Land and Water). For reasons explained in my evidence, the Project is consistent with these objectives and policies.
152. A range of cultural mitigation has been offered up by AFFCO as detailed elsewhere in my evidence and I consider these are appropriate.

RECOMMENDED RESOURCE CONSENT CONDITIONS

153. I attach in **Appendix A** a suite of resource consent conditions which I consider are appropriate to avoid, remedy and mitigate adverse effects of the Project. I note these conditions were initially generated by AFFCO's technical experts, and have been added to and modified by Regional Council staff.
154. While most conditions are agreed, there are still some where, as explained in the evidence of **Mr Lowe** there is uncertainty as to the Regional Council's intent in redrafting or proposing new conditions. **Dr Ausseil** also raises some questions around the conditions. I, and AFFCO's other experts, will discuss these conditions with the Regional Council's experts before the hearing and I will provide an update at the hearing.

DURATION OF CONSENTS

155. Table 4 below shows the terms sought in the resource consent application and the terms I consider are appropriate. I note that Ms Manderson does not

recommend consent terms in her Section 42A Report²⁴, and that she would be happy to consider this further in due course.

Table 4: Consent Duration

Activity	Sought in Application	Ms Manderson Section 42A	Mr Edwards Evidence
Discharge of treated meatworks effluent and associated solids and sludges to land	35 years	TBC	32 years
Discharge of odours and aerosols to air arising from the discharges to land	35 years	TBC	32 years
Discharge of treated meatworks effluent to ground water by seepage from wastewater treatment ponds	35 years	TBC	32 years
Discharge of treated meatworks to the Oroua River	35 years	TBC	32 years
The construction of a discharge structure and bed level control structure in the bed and banks of the Oroua River and its unnamed tributary ²⁵ .		TBC	5 years

156. I consider that a consent duration of approximately 32 years (with an expiry date on 1 July 2049) is appropriate for the discharge consents being sought. I explain why I am of this opinion below.
157. I consider sub-Policy 12-5(b) of the One Plan is applicable in this instance as the consents relate to a discharge under Section 15 of the RMA. Policy 12-5(b) provides guidance (i.e. 'generally be set') for decision makers in respect of consent terms for discharge consents.
158. The common expiry / review date identified in Table 12.1 of the One Plan for the Oroua Water Management Zone is 2019 (1 July). This means that under the 10 year extension provisions of the policy, and taking into account the fact that the first common catchment date is within 3 years of the current date, the expiry date for the Project's discharge consents could be any of the years 2029, 2039 or 2049.
159. In considering whether the 10 year extension provisions are appropriate to a particular consent, Policy 12-5(b) guides that the following criteria should be considered and I consider each one in turn below:

²⁴ Section42A Report – Ms Tabitha Manderson – Section Q, paragraph 187, page 32

²⁵ Noting that occupation is a permitted activity

- (i) the extent to which an activity is carried out in accordance with a recognised code of practice, environmental standard or good practice guideline;
- (ii) the most appropriate balance between environmental protection and investment by the applicant;
- (iii) the provision of s128 review opportunities to enable matters of contention to be periodically reviewed in light of monitoring and compliance information; and
- (iv) whether the activity is infrastructure; water, sewage or stormwater treatment plants and facilities; or publicly accessible solid waste facilities including landfills, transfer stations and resource recovery facilities.

160. Criteria (i): I understand there is no industry benchmarks or standards which apply to the meat processing industry in respect of managing wastewater. I understand however, that guidance does exist for various activities that make up a meat processing facility. For example there is guidance on managing land application of waste, pond lining and air discharges. Based on my review of the information before me, and as detailed in the evidence of Mr Lowe, AFFCO:

- (a) has refined its operations over its long history and currently uses 1.5m³ of clean water per head processed whereas other plants use 2.5m³ per head. I understand water reductions are continually being investigated due to the link with Plant viability and product quality;
- (b) has delivered consistent results in effluent quality with a high degree of certainty with system performance with both flow and contaminants load spikes being assimilated / buffered within the treatment process;
- (c) has good relationships with immediate neighbours to the extent that no opposing submissions from neighbouring properties have been received;
- (d) has for a long time (around 40 years as I understand) put an emphasis on promoting and prioritising discharges to land over water at the Manawatu Plant;
- (e) has designed and seeks to implement on going improvements in a CLAWD regime which will in this instance sustainably manage wastewater discharges by avoiding discharges below median flow and shift the bulk of the discharge volume to above median flow and in particular above the 20FEP; and,
- (f) has committed to the imposition of consent conditions which I understand effectively require the use of best practice management practices.

161. I consider that the Project compares favourably with this criteria.
162. *Criteria ii:* based on the evidence be of **Mr Lowe** and **Mrs Nuku**, I consider the Project represents the most appropriate balance between environmental protection and investment by the applicant. Of paramount importance to AFFCO is the viability of the Manawatu Plant, but also important is sustainably managing discharges via the CLAWD system which recognises and enhances the environment (most notably through by avoiding discharges below median flow and shifting the bulk of the discharge volume to above median flow and in particular above the 20FEP). I consider this is a good environmental outcome when compared to the current discharge regime.
163. **Mrs Nuku's** evidence explains that a short term consent does not provide sufficient financial certainty for a processing plant in today's commercial environment. She says that it will significantly constrain any growth of the plant, and in the short term would make it more likely that, should consolidation of the industry occur, another site would be preferred.
164. I consider that the Project compares favourably with this criteria.
165. *Criteria iii:* This can be addressed via conditions of consent. I note the Section 42A Report (via conditions) prepared by **Ms Manderson** recommends an annual review condition. I consider this to be excessive, not reflective of the nature of effects identified by experts (including seepage from the pond in respect of which no significant effects have been identified), does not reflect the generally good track record of sound compliance, creates a degree of uncertainty for the consent holder and will be inherently expensive without good reason.
166. In my opinion, a 5 yearly review condition is appropriate and will compare favourably with the criteria.
167. *Criteria iv:* Infrastructure is a term defined in the RMA and includes a water supply distribution system for irrigation (sub-clause (g)) and a sewerage system (sub-clause (f)). There is no definition of 'sewerage system' in the RMA and I accept that the wastewater ponds may not be 'infrastructure' as defined by the RMA. However, the irrigation activity is vital to the Project as a whole. On that basis I consider that the Project as a whole is 'infrastructure' as defined by the RMA.
168. The evidence of **Mrs Nuku** is that the investment in the Plant is estimated at \$130 million.
169. I therefore consider that the proposal compares favourably with the criteria.
170. In my opinion, the Project compares favourably with each of the listed criteria for considering 10 yearly extensions to consent term as provided guided by Policy 12-5(b).

171. Consolidating this assessment are the following matters which I also consider relevant for determining a consent term for the Project:
- (a) the effects of the Project are predictable (and well known given the long history of operation of an irrigation and river discharge system), have been assessed as being acceptable (including in relation to pond seepage in respect of which all experts agree that there are no significant adverse effects evident) and there will be significant positive effects through providing for economic and social well-being (and health and safety) and limiting discharges to periods of higher flows;
 - (b) either the Project is consistent with the One Plan's water quality targets, or where not consistent it is consistent with the objective to enhance water quality by moving towards the target in respect of the determinand not met;
 - (c) overall, and while noting that a prosecution occurred in 2012 as explained in the evidence of **Mr Hill and Mr Standen**, the AFFCO Manawatu Plant has a good compliance record;
 - (d) the financial investment made by AFFCO in the Manawatu Plant is significant;
 - (e) the Project has included the assessment of alternative options for discharging wastewater. In doing so a 100% discharge to land is evidently not achievable as described in the evidence of **Mr Lowe**, and the proposed CLAWD (and the Project as a whole) is the BPO;
 - (f) the more frequent re-consenting requirements associated with a lesser term will create additional expenses for AFFCO (and other parties), which may in turn lead to viability issues for the Manawatu Plant;
 - (g) **Mrs Nuku's** evidence explains that a short term consent does not provide sufficient financial certainty for a processing plant in today's commercial environment. She says that it will significantly constrain any growth of the plant, and in the short term would make it more likely that, should consolidation of the industry occur, another site would be preferred;
 - (h) the 32 year term I recommend aligns with the common catchment expiry date for the Oroua (Mana_12) Water Management Zone as set in the One Plan; and
 - (i) 5 yearly review conditions (as recommended in the conditions attached to my evidence) will allow for changes to conditions to be made should any unanticipated effects occur.
172. I note that the CIA recommends a 10 year consent term and that this is consistent with the Feilding WWTP discharge term recently granted. In my

opinion, there are a number of critical differences between the Project and the Feilding WWTP proposal, namely that:

- (a) the Project's waste stream does not include human sewerage;
 - (b) the Project benefits from a long history of operation and there is certainty as to output in respect of effluent quality, unlike Feilding; and,
 - (c) Policy 5-11 does not apply in this instance as the Project does not involve the discharge of human sewerage. Despite this, an overland flow system has been incorporated into the design for cultural reasons and the mitigation of effects on the mauri of the receiving waters. I understand there is opportunity for further discussion with iwi that may see this structure refined over time.
173. A proposition put forward in the CIA was that a 10 year term would be sufficient to allow AFFCO to implement a 100% land passage regime. It could technically be argued that the current proposal achieves this, with the river bank discharge structure. To assist and acknowledge the land discharge preference in the CIA, AFFCO are proposing to commit via consent conditions to investigate opportunities to enhance the land application system every 5 years. The outcomes of this investigation will then be discussed with tangata whenua and through a consultative and collaborative approach decisions made as to what improvements can be made.
174. Furthermore, I also note that the Shannon WWTP was granted a long term discharge consent (32 years) by the Environment Court in 2015 for its operations, inclusive of a CLAWD system. That process attracted a number of submissions which bear similarities with submission received on the Project (i.e. submitters sought 100% discharge to land).
175. Based on the above, I consider a consent duration of approximately 32 years (expiring on 1 July 2049) is appropriate for the Project.

PART 2 ASSESSMENT

Section 6 matters of national importance

176. Section 6 of the RMA sets out matters of national importance that must be recognised and provided for in making a decision to grant or decline these consent applications.
177. I note that **Ms Manderson** has identified what I consider to be the relevant Section 6 matters in her Section 42A Report. I am generally in agreement with her assessment on these matters.
178. In respect of Section 6(e) *the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other*

taonga, I am of the opinion that AFFCO has sought to recognise this relationship via the following ways:

- (a) the development of solutions to separate the discharge from the Otoku Stream;
- (b) the planting of the stream and river banks through the AFFCO property;
- (c) the provision for a fish passage structure at the confluence of the Otoku Stream and Oroua River;
- (d) provision of an overland flow feature in the discharge to river structure. The overland flow system is akin to 'the alternative system that mitigates the adverse effects on the mauri of the receiving water body as directed by Policy 5-11 of the One Plan. While this policy is relevant only to human sewage discharges, it has been adopted by AFFCO for the Project and will, in my opinion, assist with mitigating effects on the mauri of the receiving waters;
- (e) a 5 yearly investigative process whereby AFFCO will investigate the potential to apply more wastewater to land. This will involve direct consultation with Ngati Kauwhata and Rangitaane; and
- (f) supporting Cultural Health Index Monitoring for Ngati Kauwhata and Rangitaane.

Section 7 other matters

- 179. Section 7 of the RMA provides a list of further matters that particular regard must be given to in relation to managing the use, development and protection of natural and physical resources.
- 180. I note that **Ms Manderson** has identified what I consider to be the relevant Section 7 matters in her Section 42A Report. I generally agree with her assessment. I do however emphasise the significance of Section 7(b) and the efficient use and development of physical resources. At an estimated cost of \$130 million, the Manawatu Plant is a significant physical resource in the district and region.

Section 8 Treaty of Waitangi

- 181. Section 8 of the RMA requires that the principles of the Treaty of Waitangi be taken into account. In my opinion, the principles of the Treaty of Waitangi have been taken into account through direct consultation and the commissioning of a CIA on behalf of Ngati Kauwhata who are recognised (as I understand) as Tangata Whenua for the Feilding area.

182. I do not consider this consultation ‘tokenism’ to the extent that the consultation has had a direct bearing on Project design and the recommended consent conditions.

183. The efforts AFFCO has made to respond to cultural issues (as explained in my evidence above and in the evidence of **Mrs Nuku** and **Mr Lowe**), in particular supporting Cultural Health Index monitoring, in my opinion appropriately respond to the principles of the Treaty of Waitangi.

Section 5 purpose

184. Section 5 of the RMA sets out the overall purpose of the RMA to promote the sustainable management of natural and physical resources.

185. There are significant positive effects arising from the Project, including:

- (a) enabling the people and communities of Feilding, the district and region provide for their economic and social well-being employment;
- (b) avoiding discharges below median flow and shifting the bulk of the discharge volume to above median flow, and in particular above the 20 FEP. This discharge regime will result in a reduction of effects of the proposed discharge on in-stream dissolved nutrient concentrations (DRP and SIN) by 87% less than that under the current operations, despite an allowance for a 20% increase in production; and
- (c) an increase in plant production that will enable increased employment and certainty as to the future operation of the plant, while significantly reducing the environmental effects of the current discharges.

186. Adverse effects have been avoided, remedied or appropriately mitigated, including through the design of the CLAWD regime, and by the conditions attached to my evidence.

187. After reviewing all the information, assessments, submissions, Section 42A Reports and evidence, I am of the view that the Project is fundamentally about achieving the sustainable management of natural and physical resources as set out in Section 5 of the RMA.

Hywel David Edwards

27 October 2016