Before an Independent Hearings Panel

The Proposed Waikato Regional Plan Change 1

IN THE MATTER OF the Resource Management Act 1991 (**RMA**)

IN THE MATTER OF the Proposed Waikato Regional Plan Change 1, Block 3 Hearings: **C3. Farm Environment Plans (Schedule 1)**

REBUTTAL EVIDENCE OF JUDE ADDENBROOKE ON BEHALF OF MIRAKA LIMITED

(Environmental Management)

Dated: 19 July 2019

BUDDLE FINDLAY
NEW ZEALAND LAWYERS
Barristers and Solicitors
Auckland

Solicitor Acting: **Jennifer Caldwell / Mathew Gribben**
Email: jennifer.caldwell@buddlefindlay.com / mathew.gribben@buddlefindlay.com
Tel 64-9-358 2555 Fax 64-9-358 2055 PO Box 1433 DX CP24024 Auckland 1140

1. EXECUTIVE SUMMARY

1.1 My full name is Jude Addenbrooke. I am an Environmental Management Consultant. I presented evidence on behalf of Miraka Limited in Block 1. This evidence relates to Farm Environment Plans, Schedule 1 of the Plan and the activity status of farming. My evidence should be read alongside that of Mr Grant Jackson and Ms Kim Hardy for Miraka.

1.2 Farm Environment Plans are the primary driver of targeted practice change and improvement in water quality. They can address specific risks and be tailored to allow the most appropriate combination, priority and order of takeup of practices. They allow farmers to work alongside trained professional Certified Farm Environment Planners to achieve optimal results.

1.3 I consider that a permitted activity status for farming is overall more effective than requiring a resource consent provided a rigorous framework is in place relating to certification, oversight, monitoring and auditing.

1.4 As outlined by Mr Jackson, Miraka's preferred position is permitted activity status with the content of FEPs guided by the objectives and principles such as those outlined in the Dragten Report. An objectives and principle approach gives a certified expert scope to address all matters of significant on a property, leading to the best environmental results. I have reviewed Schedule 1 contained in the section 42A report, along with other evidence such as that from Mr Eccles on behalf of Federated Farmers, and recommend various changes to Schedule 1. This includes a purpose statement and improved monitoring and reporting.

1.5 In the event that an objective and principles approach is not preferred by the Hearing Panel, Miraka's second preference is for permitted activity status but with a Schedule 1 based on minimum standards. I have reviewed the example provided by Mr Willis of Fonterra, and in consultation with Miraka's internal farming experts prepared an amended version of Schedule 1A. I recommend changes to some standards but more importantly I recommend changes to include flexibility for the CFEP to match the standards to the relevant bio-physical and other characteristics of each farm. This would need to be clearly spelt out in each FEP along with a timetable for when actions need to be undertaken.

2. INTRODUCTION

2.1 My full name is Jude Addenbrooke. I am director of Addenbrooke Advisory Limited, an independent consultancy providing environmental science, resource management, integrated catchment management, farm environment planning, community engagement and associated services. My qualifications and experience are outlined in my evidence for Block 1, dated 15 February 2019.

2.2 In relation to Block 3 issues, I am experienced in developing Farm Environment Plans (**FEP**s) (or similar) that include farm-scale mapping of Land Use Capability classes, soils, management units and critical source areas, identification and prioritisation of risks, determination of appropriate mitigation actions, development of action schedules and review of actions. I have also developed Farm Plan templates, supervised consultants doing plans, and audited other professionals' farm plans. This has been in the context of integrated catchment management programmes to improve soil and water quality. My experience is primarily with dry stock operations on hill country.

2.3 I was engaged by Miraka Limited (**Miraka**) at the beginning of 2017 to assist with its response to Plan Change 1 and Variation 1 (**Plan Change 1**), including submissions, collaboration with other key parties, technical advice and hearings preparation.

2.4 I have read the Environment Court's Code of Conduct for Expert Witnesses, and I agree to comply with it.

2.5 I would be available for expert witness conferencing should that be requested by the Panel

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3. SCOPE OF EVIDENCE

3.1 This statement of rebuttal evidence addresses the analysis and comments within primary evidence on topic C3 Farm Environment Plans (Schedule 1). This was addressed by a number of witnesses but in particular:

(a) Federated Farmers – Mr Grant Eccles;

(b) Federated Farmers – Mr Ian Millner

(c) Fonterra – Mr Gerard Willis;

(d) Dairy New Zealand – Ms Justine Young; and

(e) Waikato Regional Council – Mr Robert Dragten;

3.2 In responding to this evidence, my evidence also refers in places to the section 42A report and the Dragten approach to Schedule 1 (Dragten Schedule) discussed in the report.

3.3 My statement is structured around Miraka's preferred approach and alternative approach, as outlined by Mr Jackson in his rebuttal evidence, and the associated Schedule 1 and Schedule 1A. My evidence consists primarily of the Miraka amendments to these schedules and the reasons for our amendments. These schedules are attached. Schedule 1 is based on the Dragten Schedule 1 included in the section 42A report for Block 3 with proposed amendments from Miraka in tracked changes. Schedule 1A is based on Schedule 1A included in the primary evidence of Mr Willis with proposed amendments from Miraka in tracked changes.

3.4 This statement is to be read in conjunction with the rebuttal evidence from Grant Jackson and Kim Hardy. In relation to Schedule 1, Mr Jackson has focused on the considerations behind Miraka's preferred framework and the role of Certified Farm Environment Planners (**CFEP**s). I have endeavoured to not repeat the evidence of Mr Jackson, although my experience does support his conclusions. Ms Hardy addresses the planning aspects of a FEP Schedule 1 or 1A and the accompanying rules and provisions in the Plan, such as Methods.

3.5 My evidence draws on my professional experience in using FEPs to facilitate changes in farm practices within the context of sustainable land and water management, and focuses on two elements that are critical to achieving the PC1 goals of improved water quality:

(a) Inclusion of the most appropriate and effective mitigation actions and practices within an FEP;

(b) Implementation of such actions and practices.

3.6 It then addresses specific amendments to Schedule 1 and Schedule 1A.

4. USING FEPS TO ACHIEVE IMPROVEMENTS IN WATER QUALITY

4.1 In his rebuttal evidence, Mr Jackson reiterated Miraka's support for FEPs as the primary driver of targeted practice change and improvement in water quality. He also emphasised Miraka's preferred framework which is Permitted Activity status for those properties/enterprises that operate within a Certified Industry Scheme (**CIS**) and have

a FEP approved by a CFEP. I support all of these aspects of Miraka's preferred framework.

Inclusion of the most appropriate and effective mitigation actions within an FEP

4.2 Improvements in water quality require changes to the practices and actions undertaken on a property or enterprise. Farm Environment Plans are an effective mechanism to achieve change in so far as they can be tailored to

(a) address the specific issues and risks arising from the sub-catchment, farm system and biophysical context that the property or enterprise operates within; and

(b) identify the most appropriate combination, priority and order of uptake of practices and actions to make a meaningful reduction in risk of contaminant discharge within a short time period.

4.3 Tailoring and flexibility within FEPs are a strength, not a weakness. I am aware from other evidence throughout these hearings that some submitters are concerned that tailoring and flexibility give too much choice to the farmer and therefore necessary actions may not be undertaken. I disagree with this conclusion, particularly given the extensive certification, monitoring, reporting and auditing requirements within PC1.

4.4 Tailoring and flexibility is required to accommodate the extensive spatial variation in biophysical characteristics throughout the Waikato and Waipa catchments. The fundamental differences in geology, soil parent material, slope, aspect, rainfall, temperature and vegetation result in a range of soil types, erosion potentials and leaching potentials. These differences, combined with the variation in farm systems, result in quite different issues that need to be addressed, and different levels of risk both within and across the issues. Different types of issues, and even similar issues but on different soils or slopes for example, require very different practices and mitigation actions to be put in place to address them. The flexibility to select the most appropriate practices and actions for any property or enterprise is key to effectiveness.

4.5 A critical element in ensuring that the flexibility results in effective improvements to farm practice is the involvement of professionals who are trained and experienced in assessing landform and soil, farming systems, critical source areas and risk, and in identifying the most appropriate actions. These are the CFEPs, and Miraka considers that all FEPs should be certified by a CFEP. Mr Jackson outlines the reasons why CFEPs can be trusted to undertake their role with integrity. I consider that the framework of Permitted Activity status for an FEP certified by a CFEP provides

greater likelihood of success than a consent pathway where the application is processed by a consent officer. The technical and on-the-ground expertise of the CFEP is required to ensure relevance and effectiveness of practices and actions.

Implementation of FEP mitigation practices and actions

4.6 The second key element for achieving improvements in water quality is that the practices and actions must be implemented. The various drivers (and barriers) to implementation have been discussed in the primary evidence of Dr Mark Paine and Dr Gavin Sheath in Block 1, in the Dragten report within the s42A report for Block 3, and within the primary evidence of Mr Millner and Mr Dragten. I do not repeat their points here, but my experience does support them.

4.7 I emphasise a number of aspects in the context of FEP implementation.

4.8 Firstly, it is critical that the FEP is developed in partnership between farmers and independent experts. This way, the farmer can be supported in understanding the risks and can reaches a position of taking ownership of mitigating actions. Independence of the expert facilitates greater assurance and trust for many farmers, and thereby a greater willingness to accept the advice and take action.

4.9 Secondly, a Permitted Activity status for FEPs is likely to get greater buy-in from farmers than compliance under a consent, which may create barriers.

4.10 In addition, FEPs within a Permitted Activity framework can be developed and implemented within a much shorter timeframe than FEPs that have to go through a consent process. These aspects combined will result in implementation of effective practices and actions in the shortest time, leading to faster (and possibly greater) improvements in water quality.

Permitted Activity status

4.11 In terms of both facilitating the inclusion of the most appropriate and effective practices and actions in an FEP and implementation of such practices and enterprises, I consider a Permitted Activity status for farming is more effective than requiring a resource consent. However, to achieve confidence in FEPs under a Permitted Activity, a rigorous framework is required. Elements that Miraka supports to provide that rigour include:

- Preparation of the FEP using the process outlined in the Schedule
- Certification of each FEP by a CFEP;

- Permitted activity status if the property/enterprise is within a CIS. A CIS will give additional oversight and auditing of farm performance;
- Rigorous review and audit procedures; and
- Clear triggers for when farming no longer meets the permitted activity standard and requires resource consent.

4.12 These items are addressed in Ms Hardy's evidence. I now turn to Miraka's amendments of Schedule 1 and Schedule 1A.

5. FEP – SCHEDULE 1: PERMITTED ACTIVITY FOR PRINCIPLED FEP WITHIN CIS

5.1 Miraka's preferred framework is Permitted Activity status for those properties/enterprises that operate within a Certified Industry Scheme and have a FEP approved by a CFEP, with the content of FEPs guided by objectives and principles such as in the S42A Dragten Schedule 1. This approach is also recommended in the primary evidence of Dr le Miere, Mr Millner and Mr Eccles of Federated Farmers.

5.2 My evidence in this section focuses on Miraka's preference for Schedule 1, and its requested amendments.

5.3 I support the s42A Dragten 'objectives and principles' approach, for similar reasons as those outlined in sections 4.2-4.10 of my evidence above. An objectives and principles approach gives a certified expert scope to address all of the matters of significance to that property or enterprise, without limitation. By contrast, prescriptive lists of standards and actions, while appearing to be specific and therefore provide greater certainty, in reality would not provide a high level of certainty as many of the items on the list would not be applicable to a particular farm. It would also be less effective overall, as it initially directs the development of an FEP to multiple items that are not of equal value. The principles and objectives approach, on the other hand, by its very nature focuses on those things that are most important in the context of what the FEP is trying to achieve.

5.4 I support the content of Dragten's principles and objectives. They are comprehensive, relevant and sensible.

5.5 The context of Dragten's approach, however, was a Controlled Activity consent pathway. I consider it can be applied also under a Permitted Activity status, as does Federated Farmers. I support the reasoning for this given in Mr Eccles primary

evidence in Block 3 and Ms Hardy's evidence, and support many of his suggested amendments. In particular, I support the addition of Part B – Purpose of FEP, including the contexts for identifying practices and actions and for prioritising and scheduling them (with some minor alterations).

5.6 In the Miraka amendment, there is a note added to the introductory section to clearly set out the requirement to have a FEP that complies with the schedule and to undertake the actions within it in order to operate under Permitted Activity rules (copied from Mr Willis' Schedule 1A, as I considered this relevant and helpful).

5.7 There are other amendments, compared to the Dragten approach, that are also aimed at increasing the rigour of the framework, such as:

(a) certification of the FEP by a CFEP (Part A);

(b) a requirement to identify actions to be implemented within the first 12 months, and those that may be implemented over a longer time period (Part C 3);

(c) a requirement to refer to the FMU/sub-catchment community catchment plan (Part C 5); and

(d) review processes (Part D).

5.8 Other amendments are to improve the quality of information provided to the council (Part A), reduce CFEP need for interpretation (parts within Part B 1 and 2), remove duplication (Part C 4 and what was 3a), or to align with Miraka's position on certain content (Part C Principle 6).

6. FEP – SCHEDULE 1A: PERMITTED ACTIVITY FOR STANDARDS FEP WITHIN CIS

6.1 Miraka's evidence has acknowledged there are concerns that an objective/principles approach to FEPs may not provide sufficient certainty to allow for a Permitted Activity pathway. Miraka is therefore willing to support an approach whereby Schedule 1 specifies clear standards and requirements and there is a rule providing for farming that complies with those standards and requirements (within a CIS) to be a Permitted Activity. This is one of the approaches that Mr Willis of Fonterra has put forward in his primary evidence, and I generally support his reasons for this.

6.2 My evidence in this section focuses on Miraka amendments to Mr Willis' Schedule 1A. In preparing these amendments I worked in consultation with Miraka's Farm Environment Planner, Mr Warren Landles.

6.3 One of the weaker aspects of a prescriptive 'standards and requirements' approach is the potential for lack of relevance to any particular property or enterprise given the extensive spatial variation in biophysical characteristics which, combined with differences in farm systems, result in different issues and risks, and require different practices and mitigations (refer to my section 5.3 above). I have therefore added in the requirement to determine the relevant standards and requirements for each FEP according to the sub-catchment, risk and bio-physical characteristics (Part B 3).

6.4 As with Schedule 1, there are other amendments that are also aimed at increasing the rigour of the framework, such as:

(a) a requirement to identify actions to be implemented within the first 12 months, and those that may be implemented over a longer time period (Part C);

(b) a requirement to refer to the FMU/sub-catchment community catchment plan; and

(c) review processes (Part D).

6.5 I recommend a relatively large number of additions (and some amendments) to the content of Part C – Standards and Requirements. My first step in considering the amendments was to review the Willis content. I consider that some items needed strengthening, for example:

(a) Standard 4. Land and soil c) restricts winter grazing of heavy cattle on class 6e, 7 or 8 land. I consider there should be no grazing of cattle at all on class 8, simply by definition of class 8 land. Also, there should be no winter grazing of heavy cattle on any class 6 land, not just 6e. Winter grazing of heavy cattle on class 6 land that is limited by wetness for example is poor practice;

(b) I added reference to the Soil Conservation Technical Handbook 2001. This covers the range of practices and actions suitable for the various issues and risks associated with different land types; and

(c) I disagree that erosion control plans must be developed in conjunction with WRC and need not be attached to an FEP. I consider that, if an erosion control plan is necessary, it must be developed by an expert (WRC or

independent), and must be part of an FEP and subject to the remainder of the Schedule 1A requirements.

6.6 In the second step of our review process, I looked at the Miraka FEP template and transferred all of the FEP standards that Miraka expects its suppliers to comply with under Te Ara Miraka to Schedule 1A Part C. I acknowledge that this list is extensive, and may be too specific and prescriptive to be fully effective. As noted above, a key issue with prescriptive list is that, while it may give the appearance of certainty, discretion must still be exercised as to which items on it are relevant to the particular issues and risks associated with the catchment, landform and soil, and farm system and which will be most effective. I consider that is best done by a CFEP with the appropriate training and within a system of checks and balances, and not by a consent officer who may not know which actions are effective.

6.7 I also acknowledge that such a detailed and comprehensive list may off-putting to some submitters and landowners. It is put forward as an example of how a 'Standards and Requirements' approach to a FEP within a Permitted Activity framework may look. If the Panel were to accept this approach, Miraka seeks expert conferencing to work through the detail.

Jude Addenbrooke

19 July 2019

APPENDIX A:

Miraka Limited - Rebuttal evidence – Block 3

19 July 2019

Drafting note: This Schedule is based on Schedule 1 included in the section 42A report for Block 3 with proposed amendments from Miraka Limited.
Text in Black is from the Section 42A Report for Block 3.
Text in Green is from the primary evidence of Mr Eccles on behalf of Federated Farmers
Text in Track Changes are from Miraka Limited

Schedule 1 - Requirements for Farm Environment Plans/Te Āpitihanga 1: Ngā Herenga i ngā Mahere Taiao ā-Pāmu

The Farm Environment Plan (FEP) will be prepared and provided in accordance with Parts A-C, ~~and B~~ below. Progress with implementation will be monitored, ~~reviewed~~ in accordance with Part D~~C~~. Any change to an FEP must be made ~~and changed~~ in accordance with Part E~~D~~.

Note: A person seeking to operate in accordance with permitted activity Rules 3.11.5.2 or 3.11.5.3 must have an FEP consistent with all parts of this Schedule, and must undertake the actions described in the FEP. A farming activity that has an FEP that does not comply with this schedule, or which is undertaken in a manner that does not comply with the FEP will not meet the conditions of the permitted activity rule and an application for resource consent will be required.

PART A – PROVISION OF FEP

An FEP that has been certified as meeting the requirements of B below by a Certified Farm Environment Planner (CFEP), must be submitted to Waikato Regional Council (the council) using either:

1. A council digital FEP tool including the matters set out in Part B below to the extent relevant, with maps provided as spatial GIS layers; OR
2. An industry digital FEP tool, capable of recording information consistent with the council data exchange specifications that includes the matters set out in Part B below to the extent relevant, with maps provided as spatial GIS layers.

~~2. An industry prepared FEP that:~~

~~a) includes the following minimum components:~~

~~i. the matters set out in Parts B below to the extent relevant; and~~

~~ii. performance measures that are capable of being reviewed as set out in Part C below~~

~~b) has been approved by the Chief Executive of Waikato Regional Council as meeting the criteria in (a) and capable of providing FEPs in a digital format, consistent with the council data exchange specifications.~~

The Waikato Regional Council data exchange specifications will set out the standards and detail of the data exchange process to be used by external industry parties in the provision of FEPs.

PART B – PURPOSE OF A FARM ENVIRONMENT PLAN

The purpose of a Farm Environment Plan is to assess the farm enterprise against good farming practice for the management of diffuse discharges of nitrogen, phosphorous, sediment and microbial pathogens. Where the farm enterprise is not consistent with good farming practice, the Farm Environment Plan is to identify the actions and mitigations to manage the diffuse discharge of nitrogen, phosphorous, sediment and microbial pathogens from the farm enterprise to achieve good farming practice.

In identifying actions and mitigations, the Farm Environment Plan is to identify the nature, combination, priority and timing of actions to manage the diffuse discharge of nitrogen, phosphorous, sediment and microbial pathogens from the farm enterprise in a way that:

1. Recognises and takes account of~~provides for~~ the characteristics of the sub-catchment within which the subject farming enterprise is located as set out in the relevant Sub-catchment Management Plan and/or Catchment Profile produced by Waikato Regional Council; and

2. Corresponds to the scale and significance of the risk from the discharge of each contaminant from the farm enterprise~~ to the likely achievement of the short term targets^ in Objective 3 or the progression towards the outcomes anticipated by the Vision & Strategy and values^ referred to in Objective 1~~; and

3. Recognises and takes account of the bio-physical characteristics of the property/enterprise ~~Takes account of the relative contribution of the industry sector within which the farm enterprise belongs to the likely achievement of the short term targets^ in Objective 3 or the progression towards the outcomes anticipated by the Vision & Strategy referred to in Objective 1~~; and

4. Takes account of the resources reasonably available to the farm enterprise.

PART CB – FEP CONTENT

The FEP shall contain as a minimum:

1. The property or enterprise details:
    a) Full name, address and contact details (including email addresses and telephone numbers) of the person responsible for the land use activities;
    b) Legal description of the land and any relevant farm identifiers such as dairy supply number.

2. A map(s) at a scale that clearly shows:
    a) The boundaries of the property or land areas being farmed;
    b) The boundaries of the main land management units or land uses on the property or within the farm enterprise;
    c) The location of any Schedule C waterbodies;
    d) The location of riparian vegetation and fences adjacent to Schedule C waterbodies;
    e) The location on any Schedule C waterbodies waterwayswhere stock have access or there are stock crossings;
    f) The location of any critical source areas and hotspots for contaminant loss to groundwater or surface water; and
    g) The location of land that is cultivated and land to be cultivated over the next 12-month period; and
    h) The location(s) of any required actions and practices to support the achievement of the objectives and principles listed in section C3.
    h) All land that may be cultivated and land to be cultivated over the next 12-month period.

3.. An assessment of whether farming practices are consistent with each of the following objectives and principles; and
    a). Aa description of those farming practices that will continue to be undertaken in a manner consistent with the objectives and principles;
    b). A description of those farming practices that are not consistent with the objectives or principles, and a description of the time bound actions or practices that will be adopted to ensure the objectives or principles are met; and
    c) identification of those farming practices in a) and b) that the CFEP has identified must be implemented within 12 months of the certification of the FEP and those that may be implemented over a longer time period..

4. The FEP shall include for each objective and principle in section 6 below:
    a) Detail and content that reflects the scale of environmental risk posed by the activity;

~~b) A defined and auditable description of the actions and practices to be undertaken to farm in accordance with the objectives and principles in Part C;~~

a~~c~~) Accurate and auditable records of annual farm inputs, outputs and management practices that ~~The records and evidence that must be kept that~~ demonstrate performance and the achievement, or progress toward achievement, of an objective or principle listed in Part C; and

b) Information described in a) above is provided to the Waikato Council on request.~~.~~

5. The FEP shall include a description of actions undertaken to address FMU/sub-catchment community catchment plan objectives including but not limited to:

a) Freshwater targets.

b) Community identified farm practice change targets.

c) FMU/sub-catchment monitoring and auditing practices.

d) Community education initiatives.

~~**3a – Management area:** Whole farm~~

~~**Objective 1**~~

~~To manage farming activities according to good farming practice, and in a way that minimises the loss of contaminants from the farm.~~

~~**Principles**~~

~~1. Identify the characteristics of the farm system, the risks that the farm system poses to water quality, and the good farming practices that minimise the losses of sediment, microbial pathogens, phosphorus and nitrogen.~~

~~2. Maintain accurate and auditable records of annual farm inputs, outputs and management practices.~~

~~3. Manage farming operations to minimise losses of sediment, microbial pathogens, phosphorus and nitrogen to water, and maintain or enhance soil structure.~~

6a~~3b~~ – Management Area: Nutrient management

Objective 1~~2~~

To minimise nutrient losses to water while maximising nutrient use efficiency.

Principles

1~~4~~. Monitor soil phosphorus levels and maintain them at or below the agronomic optimum for the farm system.

2~~5~~. Manage the amount and timing of fertiliser inputs, taking account of all sources of nitrogen and phosphorus, to match plant requirements and minimise risk of losses.

36. Store and load fertiliser to minimise risk of spillage, leaching and loss into waterbodies.

47. Ensure equipment for spreading fertilisers is well maintained and calibrated.

58. Store, transport and distribute feed to minimise wastage, leachate and soil damage.

Objective 3 2

To farm in accordance with the nitrogen management requirements of PC1

Principle

Either, where the property's NRP is ≤75th percentile:

9. Farm in a manner that does not result in farm nitrogen losses exceeding the farm's NRP;

Or, where the property's NRP is > than the 75th percentile

9. Farm in a manner that does not result in farm nitrogen losses exceeding the 75th%ile for the FMU; or

96. Farm in a manner that does not result in farm nitrogen losses exceeding the N Surplus Nitrogen Reference Point for the property or enterprise.

36bc – Management Area: Waterways

Objective 34

To minimise losses of sediment, microbial pathogens, phosphorus and nitrogen to waterways.

Principles

710. Identify risk of overland flow of phosphorus, sediment and microbial pathogens on the property and implement measures to minimise ~~losses~~ transport of these to waterbodies.

811. Locate and manage farm tracks, gateways, water troughs, self-feeding areas, stock camps, wallows and other sources of run-off to minimise risks to water quality.

Objective 45

To exclude stock from waterbodies and minimise stock damage to the beds and margins of wetlands and riparian areas.

Principle

912. Exclude stock from waterbodies to the extent that it is compatible with land form, stock class and stock intensity. Where exclusion is not ~~possible~~ practicable, mitigate impacts on waterways.

1013. Exclude stock in a manner consistent with the requirements of Schedule C.

~~3~~6c~~d~~ **– Management Area:** Land and soil

Objective 5~~6~~

To minimise contaminant losses to waterways from soil disturbance and erosion.

Principles

11~~14~~. Manage periods of exposed soil between crops/pasture to reduce risk of erosion, overland flow and leaching.

12~~15~~. Manage or retire erosion-prone land to minimise soil losses through appropriate measures and practices.

13~~16~~. Select appropriate paddocks for growing crops and intensive grazing, recognising and mitigating possible nitrogen and phosphorus, faecal, and sediment loss from critical source areas.

14~~17~~. Manage grazing and crops to minimise losses from critical source areas.

~~3~~6d~~e~~ **– Management Area:** Effluent

Objective 6~~7~~

To minimise contaminant losses to waterways from farm animal effluent.

Principles

15~~18~~. Ensure the effluent system meets industry-specific Code of Practice or equivalent standard.

16~~19~~. Have sufficient storage available for farm effluent and wastewater and actively manage effluent storage levels.

17~~20~~. Ensure equipment for spreading effluent and other organic manures is well maintained and calibrated.

18~~21~~. Apply effluent to pasture and crops at depths, rates and times to match plant requirements and soil water holding capacity.

~~3~~6e~~f~~ **– Management Area**: Water and irrigation

Objective 7~~8~~

To operate irrigation systems efficiently and ensuring that the actual use of water is monitored and is efficient.

Principles

19~~22~~. Manage the amount and timing of irrigation inputs to meet plant demands and minimise risk of leaching and run off.

20~~23~~. Design, check and operate irrigation systems to minimise the amount of water needed to meet production objectives.

PART ~~C~~ D – FEP REVIEW MONITORING AND REPORTING REQUIREMENTS

The FEP shall be reviewed no more than 12 months following approval by a Certified Farm Environment Planner for consistency with this schedule and to determine achievement of the commitments recorded in the FEP including, as relevant:

1. Performance of the property or enterprise against the actions and practices recorded in the FEP that is being reviewed including whether any critical actions required to be undertaken within 12 months of certification have been undertaken; and
2. Whether the commitment to continue good farm practice has been fulfilled; and
3. Whether there has been an acceptable rate of progress towards the practices and actions in the FEP that can be implemented over time.

~~1. Prior to lodging a landuse consent application with the Council under rule 3.11.5.3 – 3.11.5.5 of PC1; and~~

~~2. Within. the granting of that consent application; and~~

~~3. In accordance with the review intervals set out in the conditions of that resource consent; and~~

~~4. In accordance with permitted activity x.xx, controlled activity x.xx and RDA x.xx~~

The purpose of the review is to provide an expert opinion as to whether the farming activities on the property are being undertaken in a manner consistent with ~~the objectives and principles set out in Part B of this schedule~~ the commitments recorded in the FEP. The review shall be undertaken by a Certified Farm Environment Planner who holds a reviewing endorsement (issued by WRC), and must be undertaken in accordance with the review process set out the Waikato Regional Councils FEP Independent Review manual. The review may include use of the Dragten grading system as set out in method 3.11.4.3.

The review shall be undertaken by re-assessing the FEP in accordance with the requirements set out in this schedule and against the actions and timeframes set out in the FEP. The results of the review shall be provided to the Waikato Regional Council, within 20 working days of the review due date.

PART ED – AMENDING AN FEP CHANGES

Unless otherwise required by the Waikato Regional Council in accordance with any conditions of anythe resource consent, changes can be made to the FEP without triggering the need for review by a CFEP, provided:

a)1. The amended FEP is certified by a Certified Farm Environment Planner as continuing to comply with the requirements farming activity remains consistent with Part B of this schedule

b)2. The change to the FEP does not contravene any mandatory requirement of the resource consent , or any requirement of the Regional Plan that is not already authorised.

c)3. The nature of the change to the FEP is documented as an amended FEP and provided to the regional council as though it were a new FEP in a manner consistent with Part A of this Schedule. in writing and made available to any CFEP undertaking a review, or to the Waikato Regional Council, on request.

APPENDIX B:

Miraka Limited - Rebuttal evidence – Block 3

19 July 2019

Drafting note: This Schedule is based on Schedule 1A included in the primary evidence of Mr Willis with proposed amendments from Miraka Limited.

Schedule 1A - Requirements for Farm Environment Plans/Te Āpitihanga 1A: Ngā Herenga i ngā Mahere Taiao ā-Pāmu

The Farm Environment Plan (FEP) will be prepared and provided in accordance with Parts A-C below. Progress with implementation will be monitored in accordance with Part D ~~(where the FEP is required as a condition of resource consent)~~. Any change to an FEP must be made in accordance with Part E.

Note: A person seeking to operate in accordance with permitted activity Rules 3.11.5.2 or 3.11.5.3 must have an FEP consistent with all parts of this Schedule, and must undertake the actions described in the FEP. A farming activity that has an FEP that does not comply with this schedule, or which is undertaken in a manner that does not comply with the FEP will not meet the conditions of the permitted activity rule and an application for resource consent will be required.

PART A – PROVISION OF FEP

An FEP that has been certified as meeting the requirements of B below by a Certified Farm Environment Planner (CFEP), must be submitted to Waikato Regional Council (the council) using either:

1. A council digital FEP tool that includes the matters set out in Part B below to the extent relevant, with maps provided as spatial GIS layers; OR
2. An industry digital FEP tool, capable of recording information consistent with the council data exchange specifications that includes the matters set out in Part B below to the extent relevant, with maps provided as spatial GIS layers.

The Waikato Regional Council data exchange specifications will set out the standards and detail of the data exchange process to be used by external industry parties in the provision of FEPs.

PART B – CONTENT OF AN FEP

The FEP shall contain as a minimum:

1. The property or enterprise details:
   a) Full name, address and contact details (including email addresses and telephone numbers) of the person responsible for the land use activities;
   b) Legal description of the land and any relevant farm identifiers such as dairy supply number.

2. A map(s) at a scale that clearly shows:
   a) The boundaries of the property or land areas being farmed;
   b) The boundaries of the main land management units or land uses on the property or within the farm enterprise;
   c) The location of any Schedule C waterbodies;
   d) The location of riparian vegetation and fences adjacent to Schedule C water bodies;
   e) The location on any Schedule C waterbodies~~ways~~ where stock have access or there are stock crossings;
   f) The location of any critical source areas and hotspots for contaminant loss to groundwater or surface water; ~~and~~
   g) The location of land that may be cultivated and land to be cultivated over the next 12-month period; and
   hg) The location(s) of described actions and practices to be undertaken.

~~3. Description of whole farm management practices and general requirements:~~
   ~~a) Identification and description of the key characteristics of the farm system including all inputs, outputs and management practices~~

3. Description of the key characteristics of the farm system, the context within which it operates and the key contaminant risks. Each FEP is to address the standards and requirements in Part C. The relevant standards and requirements for each FEP are to be determined on a case by case basis by the CFEP. Determination of the relevant standards and requirements is to be done by the CFEP based on the following considerations:
   a) The characteristics of the sub-catchment within which the property or enterprise is located as set out in the relevant Sub-catchment Management Plan and/or Catchment Profile produced by Waikato Regional Council; and

b) The scale and significance of the risk from the discharge of each contaminant from the property or enterprise; and

c) Bio-physical characteristics of the property/enterprise and the types of mitigations that are therefore available and appropriate.

The combination, priority and timing of the implementation of the standards and requirements in the FEP is to be determined by the CFEP based on the above considerations a-c and the resources reasonably available to the land manager or enterprise.

4. Description of actions undertaken to address FMU/sub-catchment community catchment plan objectives including but not limited to:

a) Freshwater targets.

b) Community identified farm practice change targets.

c) FMU/sub-catchment monitoring and auditing practices.

d) Community education initiatives.

5~~4~~. Based on 3 and 4 above: ~~, and on an identification and assessment of all sources of sediment, nitrogen, phosphorus and microbial pathogens, a description of:~~

a) a description of the farming practices ~~(including the management actions for critical source areas)~~ that are consistent with the standards and requirements as set out in Part C and a commitment to continue those practices and actions;

b) a description of the farming practices ~~(including the management actions for critical source areas)~~ that are not consistent with the standards and requirements as set out in Part C and a commitment to adopt the required practices and actions; ~~as soon as practicable and in no instance shall that exceed 4 years from the date the FEP is required by this plan or 2026, whichever is earlier~~.

c) identification of any risk of contaminant loss on the farm that would not be managed by the standards and requirements as set out in Part C and a description of any additional practices and actions that may be required to address that risk; ~~-~~ and

d) identification of those farming practices in a) to c) that the CFEP has identified must be implemented within 12 months of the certification of the FEP and those that may be implemented over a longer time period.

PART C – STANDARDS AND REQUIREMENTS

1. Nutrient management

a) Nutrient budget, soil tests and industry approved tools (eg Crop Calculator) are used as tools for determining fertiliser requirements, with

i) Regular soil tests (specified frequency) undertaken as aid to determining P needs

ii) Deep soil N testing is used as basis of N applications to crops

b) Plant analysis is used as an aid to determining crop requirements and fertiliser needs.

c) Fertiliser application rates are based on advisor's recommendations

d) Fertiliser recommendations are made specifically for different nutrient blocks and/crops

e) Fertiliser is applied at appropriate rates and timing for crop type

~~e)~~f) Nitrogen (N) fertiliser is applied to pasture in response to a future feed deficit identified using a feed budgeting tool.

~~b)~~g) Nitrogen fertiliser application rates to pasture are no greater than 30 units of N per dressing.

~~e)~~h) Nitrogen fertiliser is applied to crops in accordance with recommendations of the relevant industry crop model.

i) Nitrogen fertiliser is not applied when soil temperature (as provided by either soil temperature monitoring or by reference to a catchment specific daily soil temp site) is below 10 degrees.

~~d)~~j) Nitrogen fertiliser is not applied during the high-risk months of May, June and July.

k) Crop rotation is designed to utilise residual nitrogen in the soil (e.g. cereals following fodder crop)

~~e)~~l) Soil phosphorus (P) levels are monitored and maintained at or below agronomic optimum as set out in Fertiliser Use Code of Practice - http://www.fertiliser.org.nz/Site/code-of-practice/

~~f)~~m) Where soil P levels are above optimum there will be a managed reduction plan to reach COP optimum levels.

n) Phosphate fertiliser is applied to pasture in response to predicted future feed or crop requirements

o) Phosphate fertiliser is not applied during the high-risk months of June to September inclusive

p) Phosphate fertiliser is not applied when soils are at field capacity and/or soil temperatures are below 6 degrees

q) Slow release P fertilisers are used where risk of P loss from conventional P fertilisers are high.

~~g)~~r) Fertiliser is stored on a sealed surface and covered or roofed with impermeable material. The storage area will be walled or bunded so no contaminated runoff from the storage site occurs.

~~h)~~s) On-farm e~~E~~quipment for spreading fertiliser is calibrated at least annually according to design specifications and a record kept of that calibration process.

~~i)~~t) Contractors used for fertiliser spreading are Spreadmark certified

~~j)~~u) Precision Ag technologies are used for the placement of fertiliser

v) There are no direct applications fertiliser applications into waterways

2. Farming in accordance with the nitrogen management requirements

~~a) Where the N leaching rate is greater than the 76th%ile for the relevant FMU, action must be taken to decrease nitrogen leaching rate below the 76th%ile. This action must ensure the property has reduced nitrogen leaching to at least the required level, and is to be implemented within 2 years of the relevant FEP provision date. This must be demonstrated by the inclusion in the FEP of an Overseer modelled scenario of projected future nitrogen leaching rate under revised management practices and a commitment to adopt those revised practices.~~

~~b) Where the applicable NRP is less than or equal to the relevant 76th%ile N leaching rate, e~~

a) Nitrogen losses are at or below the N Surplus Nitrogen Reference Point for the property or enterprise;

b) E~~e~~fficiency opportunities are~~will be~~ identified and described with associated actions to minimise N leaching. Expected reductions are demonstrated by the inclusion in the FEP of an Overseer modelled on-farm benchmark for N surplus and modelled scenario of future N surplus under revised management practices.

c) Where purchased N surplus is greater than 225kg N/ha/yr practice change is identified to decrease purchased N surplus such that the 225kg N/ha/yr threshold is not exceeded. Such reduction must be achieved within 5 years.

~~e)~~

~~e) A Nitrogen Risk Scoreboard (NRS) assessment of risk (sector specific) is be carried out as part of the FEP development process. An annual NRS report is generated and demonstrates that N loss risk ratings have not increased over the previous year.~~

~~d) Where purchased N surplus is greater than 150kg N/ha/yr practice change is to decrease purchased N surplus such that the 150kg N/ha/yr threshold is not exceeded.~~

Note: 'purchased N surplus' is calculated as the difference between the N brought onto a farm in fertiliser and imported animal feed less the amount of N exported from the farm in product. It is can be calculated using the on-line calculator located on the Waikato Regional Council website or, alternatively, it is an automated output of Overseer nutrient budgets. ~~of the Nitrogen Risk Scorecard~~.

3. Waterways management

a) Stock are excluded from waterways in conformance with Schedule C

b) Where Schedule C does not require exclusion, effective temporary exclusion with a minimum 1.5m setback is to be undertaken~~achieved~~ when:

i. stock are being intensively grazed using break or block feeding with electric fencing in any paddock with a Schedule C waterway; or

ii. The paddock stocking rate is greater than 30SU/ha.

c) Critical source areas for nitrogen, phosphorus, sediment and pathogens that are close to, or closely linked with a Schedule C waterway are prioritised for action.

d) Any new or replacement stock exclusion fencing of a Schedule C waterway has an average setback from the waterway bank of 3m with no point having less than a 1.5m setback for land with a slope over 10 degrees, and an average setback from the waterway bank of 1.5m with no point having less than a 1m setback for land with a slope less than 10 degrees.

e) Low points are identified and wider riparian margins left in these areas to filter runoff

~~e)~~f) Vegetated buffer strips are maintained along all waterways (including drains and wetlands)

g) Sections of the waterway margins on the property are strategically planted with appropriate riparian species to enhance stream habitat

~~f)~~h) Enhancement programme is in place for areas on the property which are identified as significant wetlands

4. Land and soil

a) ~~e)~~ All land of class 6e, 7 or 8 (as determined using the Land Use Capability (LUC) Survey Handbook) is identified on the farm maps.

b) All Class 8 land is retired from grazing

c) No cattle older than 2 years or greater than 400kg lwt are grazed on LUC class 6e or ~~,~~ 7 ~~or 8~~ land from June 1 to September 1.

d) Farm scale erosion risks (type of erosion occurring / areas of the property at risk / specific location of ~~major~~ significant erosion-prone soils ~~sites~~) are mapped.

e) Sites identified as erosion prone are to be treated with soil conservation control techniques appropriate to the erosion type as identified and described in the Soil Conservation Technical Handbook 2001. These are identified on a map, and a schedule of control works included in the FEP.

f) Differences in soil susceptibility to compaction are identified and soils or sites susceptible to compaction are mapped, and these are managed to minimise damage, including:

   i. No cattle older than 2 years or greater than 400kg lwt are grazed when soils are at field capacity

   ii. Appropriate cultivation practices for the soil type and crop are used to maintain and/or enhance soil structure

   iii. Cropping rotations are managed in such a way to help maintain and/or improve soil structure

   iv. Passage of heavy machinery over high compaction risk soils is limited or avoided

   v. Significant soil compaction damage is managed through soil aeration

Note: Properties or enterprises that have a current comprehensive erosion plan developed in conjunction with the Waikato Regional Council may attach such plan to the FEP in place of e) above.

Note: Properties or enterprises with significant areas of class 6, 7, or 8 land or with significant erosion risk by area or severity must develop their schedule of control works in e) above in conjunction with a CFEP with specific soil conservation creditation or directly with the Waikato Regional Council. Such plan is to be attached to the FEP.

~~*Note: On properties with identified large scale erosion risks an erosion plan must be developed in conjunction with the regional council. The FEP must include an action to develop the erosion plan and, once prepared, include reference to such a plan, however, council supported erosion plans (that may be at more than a single property scale) do not have to be duplicated within the property FEP.*~~

5. Winter grazing of forage crops

a) No cattle older than 2 years or greater than 400kg lwt are grazed on forage crops on LUC class 6e, 7 or 8 land from June 1 to September 1.

b) No winter grazing of forage crops occurs on LUC Class 6e, 7 or 8 land from June 1 to September 1 where the number of cattle grazed exceeds ~~30 in a single mob~~ xx lwt/m^2

c) No winter grazing of fodder crops (from June 1 to September 1) occurs within 3m of any Schedule C water body. An ungrazed, vegetated buffer of at least 3m is provided between a winter grazed block and any Schedule C water body.

ed) Break feeding is managed so animals are grazed toward a water body, with strips next to riparian margins grazed last.

f) Ephemeral waterways that are not permanently fenced that have water in them during grazing are temporarily fenced to exclude stock.

6. Races, laneways, bridges

a) New rRaces, laneways, culverts and bridges will be designed (including, in the case of races and laneways, through surface contouring and surface drainage channels) and maintained to prevent ponding and to direct race runoff away from waterways or in to vegetated areas. Direct race runoff to surface water or to intermittent flow paths must not occur.

b) Existing races races, laneways, culverts and bridges are assessed and adapted to meet the requirements in a) above within 5 years.

c)— Farm tracks, gateways, water troughs, self-feeding areas, stock camps wallows and other sources of sediment, nutrient and microbial loss are located so as to minimise the risks to surface water quality.

7. Cropping

a) No cultivation of LUC class 8e, 7 or 8 land or any land with a slope exceeding 25 degrees other than minimum tillage or direct drilling.

b) On land less than 10 degrees slope cultivation setbacks from any Schedule C waterway are 1.53m minimum.

c) On land greater than 10 degrees slope ~~(but not including class 8e and above)~~ cultivation setbacks are 35m minimum.

d) Cultivation does not occur within any intermittent flow path

e) Cultivation does not occur within any critical source areas.

8. Effluent management

a) All effluent from dairy sheds, yards, feed pads, and other collection areas are collected for land application

b) Effluent storage consistent with Dairy Effluent Storage Calculator (DESC) https://www.dairynz.co.nz/media/3223285/Using_the_Dairy_Effluent_Storage_Calculator_DNZ40_114.pdf is in place within 3 years of the date that the FEP is required.

c) Effluent ponds are managed so as to ensure there is a minimum of 75% working volume available between 1 March and 1 May each year.

d) The effluent block is sized to ensure nitrogen applications from applied effluent are less than 150kgN /ha/ year.

e) The effluent system is designed and operated to ensure that the conditions of the permitted activity rule 3.5.5.1 in the regional plan can be met at all times.

f) Yard areas (drystock and dairy) to be managed to ensure runoff to water does not occur. Where yards are sealed and washed down effluent must be collected into an effluent system and managed as set out in b) to e) above.

g) No effluent is spread, over drains or water races, within 50m of watercourse or bore, within 20m of public road, within 150m of residential dwelling

h) Major incident risks are identified and emergency procedures are in place

i) Nitrogen applied from effluent is less than 150kg/ha as calculated by OVERSEER

j) Effluent system maintenance and monitoring is carried out on a regular basis

k) Application equipment is tested annually to ensure that it applying effluent uniformly at a depth appropriate to the design specs

l) Effluent application is based on soil moisture status and effluent is not applied when soil conditions are near field capacity

m) Effluent is spread over the whole of the available area

n) Fertiliser applied to the effluent block is calculated taking into consideration the timing and amount of effluent applied

o) All effluent applications are recorded - Location, duration, speed, person who did this. (including solids or slurry tankers)

p) Effluent is applied at depths/rates that do not lead to ponding or runoff

q) Effluent system is capable of delivering the correct amount of effluent for soil type and slope

r) GPS technology is used to assist with the placement of effluent

9. Irrigation

a) Irrigation scheduling: irrigation decisions are informed by:

i. —soil moisture tapes, soil moisture probes and/or a soil moisture budget ~~are used to inform irrigation decisions.~~

ii. crop requirements

iii. recognition of differences in soil properties and their management

b) A deficit irrigation system is operated. Fixed depth and return irrigation systems must be replaced with a deficit irrigation approach within 3 years of the date that the FEP is required.

c) An assessment of the irrigation system must be undertaken every second year to determine application depths and uniformity. Where test results fall outside of manufacturers' specifications for the system an action must be included to address this within 12 months.

d) All new irrigation systems are designed to meet the Irrigation New Zealand Codes of Practice and standards, and:

i. Installed in accordance with Installation Code of Practice for Piped Irrigation Systems;

~~ii.~~ Tested and has been certified to deliver to INZ COP standards;

ii. Post installation checks show that system performs to desired specifications for system capacity, application depth and uniformity; and

iii. System is designed with site specific knowledge of soil, climate and crops needs

e) Full pre-season maintenance checks undertaken on all irrigators

f) On-going through the season system maintenance is undertaken and actions recorded

g.) GPS or other technology used to aid placement of irrigators

h) Irrigation applications to non-target areas are minimised

i) System is closed down if run-off and/or ponding occurs and action taken to correct problem

10. Water Takes

a) All farms will have in place all necessary authorisations for water takes. The conditions that apply to the particular takes on the property must be described in the FEP.

11. Record Kkeeping ~~requirements~~

a) Accurate and auditable records of annual farm inputs, outputs and management practices are maintained.

b) Information described in a) above is provided to the Waikato Council on request.

PART C D – FEP REVIEW MONITORING AND REPORTING REQUIREMENTS

The FEP shall be reviewed no more than 12 months following approval by a Certified Farm Environment Planner for consistency with this schedule and to determine achievement of the commitments recorded in the FEP including, as relevant:

1. Performance of the property or enterprise against the actions and practices recorded in the FEP that is being reviewed including whether any critical actions required to be undertaken within 12 months of certification have been undertaken; and
2. Whether the commitment to continue good farm practice has been fulfilled; and
3. Whether there has been an acceptable rate of progress towards the practices and actions in the FEP that can be implemented over time.

~~1. Prior to lodging a landuse consent application with the Council under rule 3.11.5.3 – 3.11.5.5 of PC1; and~~

~~2. Within the granting of that consent application; and~~

~~3. In accordance with the review intervals set out in the conditions of that resource consent; and~~

~~4. In accordance with permitted activity x.xx, controlled activity x.xx and RDA x.xx~~

The purpose of the review is to provide an expert opinion as to whether the farming activities on the property are being undertaken in a manner consistent with ~~the objectives and principles set out in Part B of this schedule~~ the commitments recorded in the FEP. The review shall be undertaken by a Certified Farm Environment Planner who holds a reviewing endorsement (issued by WRC), and must be undertaken in accordance with the review process set out the Waikato Regional Councils FEP Independent Review manual. The review may include use of the Dragten grading system as set out in Method 3.11.4.3 of the Plan.

The review shall be undertaken by re-assessing the FEP in accordance with the requirements set out in this schedule and against the actions and timeframes set out in the FEP. The results of the review shall be provided to the Waikato Regional Council, within 20 working days of the review due date.

PART E – AMENDING AN FEP

Unless otherwise required by the Waikato Regional Council in accordance with any conditions of any resource consent, changes can be made to the FEP, provided:

a) The amended FEP is certified by a Certified Farm Environment Planner as continuing to comply with the requirements of this schedule

b) The change to the FEP does not contravene any mandatory requirement of any resource consent held in respect of the property or enterprise, or any requirement of the Regional Plan that is not already authorised

c) The change to the FEP is documented as an amended FEP and provided to the regional council as though it were a new FEP in a manner consistent with Part A of this Schedule.