

Peak Valley, Falconer, Macassey and Cook Allan Gibson Trustee Company Limited, CRC060253

| Water take conditions | | | | |
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| No. | Proposed conditions | ECan reporting officer comments | Meridian Energy Limited comments (September) | Applicant final comments |
| | | | <p>Meridian acknowledges that there are a range of differences between the various consents sought – some are new and some are renewals, some are conversions, some have locational differences, some have scale differences, etc. It is difficult for Meridian to address all these differences when responding to only one set of conditions.</p> <p>Ideally it would have been good to have one set of standard conditions that could be agreed and a set of variations that would be applied in the different circumstances. However, Meridian accepts that such an approach would not be without its challenges.</p> <p>In relation to irrigation scale issues, Meridian considers it may be appropriate to have different conditions for different sized irrigation areas</p> | |

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| | | | e.g. irrigation under a certain number of ha to not need staging. Meridian is not in a position to suggest where such a threshold should lie. Where possible, comments have been added below that are relevant to this consent. In some places, general comments have been made that would relate to multiple consents. | |
| 1. | <p>Water shall only be taken from</p> <p>(a) Shepherds Creek, at or about map references, NZMS 260 H39:848-350, H39:858-353 and H39:861-355; and</p> <p>(b) Coal Creek, at or about map references NZMS 260 H39:864-328 and H39:869-342</p> <p>at a rate not exceeding 14 litres per second from each creek and with a combined volume not exceeding 356,000 cubic metres between 1 July and the following 30 June.</p> | Agree | n/c (no comment) | Agree |
| 2. | Water shall be used only for spray irrigation of the irrigation area specified in attached Appendix C which forms part of this consent, within a command | Agree | n/c | Agree |

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| | area of 80 hectares of winter feed crops and pasture for grazing sheep and beef cattle, as described in the application, on the area of land shown in attached Appendix A Map CRC060253, which forms part of this consent. | | | |
| 3. | All practicable steps shall be taken to: (a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and (b) Avoid leakage from pipes and structures; and (c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips. | Agree | Meridian's evidence sought that clause/s be included here that relate to irrigation depths. | n/c (no comment) |
| 4. | (a) The irrigation system used in association with taking water in terms of this permit shall not be used to distribute effluent, fertiliser or any other added contaminant, unless one of the following is installed upstream of the point of addition of the effluent, fertiliser or other added contaminant: (i) a reduced pressure | Agree | n/c | Agree |

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| | <p>zone device (RPZD), or</p> <p>(ii) a pressure vacuum breaker (PVB), or</p> <p>(iii) an air gap backflow prevention system.</p> <p>(b) Installation of a RPZD or a PVB shall be in accordance with section 9 (PVB) or section 12 (RPZD) of Australian/New Zealand Standard AS/NZS 2845.1 Water supply - Backflow prevention devices, Part 1: Materials, design and performance requirements, or an equivalent standard.</p> <p>(c) An air gap backflow prevention system shall have an unobstructed vertical air gap separation of at least twice the diameter of the inlet pipe, from the lowest point of the inlet pipe to the flood level rim of the receptacle into which it discharges.</p> <p>(d) Field testing and maintenance shall be carried out of an RPZD or a PVB at commissioning of the use of the system for application of effluent or fertiliser and annually afterwards, in accordance</p> | | | |
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| | <p>with AS 2845.3 Water supply—Backflow prevention devices, Part 3: Field testing and maintenance, or an equivalent standard.</p> <p>(e) An air gap backflow prevention system shall be tested at commissioning and annually afterwards. Maintenance shall be undertaken as necessary to ensure that backflow prevention is effective.</p> <p>(f) Installation, testing and maintenance shall be undertaken by a suitably qualified person. A report on the annual testing shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within two weeks of initial commissioning and within two weeks of each annual testing. Each report shall be accompanied with the name, qualifications and experience of the person who undertook the installation, testing or maintenance.</p> | | | |
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| | <p>Advice note</p> <p>The discharge of effluent, fertiliser or any contaminant would require authorisation as a permitted activity or via a discharge permit. Contact the Canterbury Regional Council for advice on the relevant regional rules.</p> | | | |
| 5. | <p>(a) Whenever the flow in Shepherds Creek, as estimated by the Canterbury Regional Council at map reference NZMS 260 H39:866-356 falls below 60 litres per second, the taking of water in terms of this permit shall cease.</p> <p>(b) The take from Coal Creek shall be subject to the minimum flow condition on Shepherds Creek.</p> | Agree | n/c | Agree |
| 6. | <p>(a) The consent holder shall, prior to exercising this consent, install a water flow measuring device at (map reference NZMS 260 H39:866-356 in Shepherds Creek that will enable the determination of the continuous rate of flow in the reach of the waterbody to within an accuracy of 10</p> | Agree | n/c | Agree |

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| | <p>percent.</p> <p>(b) The measuring device shall, as far as is practicable, be installed at a site likely to retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions.</p> <p>(c) install a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes, and have the capacity to hold at least one season's data as specified in clauses (d)(i) and (d)(ii), and which is telemetered, as specified in clause (d)(iii).</p> <p>(d) The recording device(s) shall:</p> <p>(i) be set to wrap the data from the measuring device such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and</p> <p>(ii) store the entire season's data in each 12 month</p> | | | |
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| | <p>period from 1 July to 30 June in the following year, which the consent holder shall then download and store and provide to the Canterbury Regional Council in a format and standard specified in the Canterbury Regional Councils form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorized by the Canterbury Regional Council: RMA Compliance and Enforcement Manager; and</p> <p>(iii) shall be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and</p> | | | |
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| | <p>the consent holder.</p> <p>(e) The measuring and recording devices described in clauses (a) and (c) shall be available for inspection at all times by the Canterbury Regional Council.</p> <p>(f) All data from the recording device described in clause (c), and the corresponding relationship between the water level and flow in clause (b), shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.</p> | | | |
| 7. | <p>(a) A fish exclusion device shall be installed, operated and maintained on the intake to ensure that fish are prevented from passing into the intake.</p> <p>(b) The fish exclusion device shall be positioned to avoid the entrapment of fish at the point of abstraction, and to minimise the risk of fish being damaged by contact with the fish screening device.</p> | Agree | n/c | Agree |

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| | <p>(c) The fish exclusion device shall be designed or supplied by a person with experience in freshwater ecology and fish screening techniques, who shall ensure that the performance criteria specified in clauses (a) and (b) of this condition are achieved, and that the device is designed in accordance with best practice, as outlined in the document Fish Screening: Good Practice Guidelines for Canterbury, NIWA Client Report 2007-092, October 2007.</p> <p>(d) Prior to the installation of the fish screen, a report containing final design plans that demonstrate that the fish screen will meet the performance criteria specified in clauses (a) and (b) of this condition, and an operation and maintenance plan for the fish screen, shall be provided to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager.</p> <p>(e) Before the taking of any water in terms of this permit,</p> | | | |
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| | <p>a certificate shall be provided to Canterbury Regional Council, by a person with experience in freshwater ecology and fish screening techniques, to certify that the design plans and operation and maintenance plan for the fish screen will meet performance criteria as outlined in this condition, and that the fish screen has been installed in accordance with the details provided to Canterbury Regional Council in accordance with clause (d) of this condition.</p> <p>(f) The fish screen shall be maintained in good working order. Records shall be kept of all inspections and maintenance, and those records shall be provided to Canterbury Regional Council upon request.</p> | | | |
| 8. | <p>The consent holder shall before first exercise of this consent:</p> <p>(a)</p> <p>(i) install a water meter(s) that has an international accreditation or equivalent New Zealand calibration endorsement,</p> | Agree | n/c | Agree |

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| | <p>and has pulse output, suitable for use with an electronic recording device, which will measure the rate and the volume of water taken to within an accuracy of plus or minus five percent as part of the pump(s) outlet plumbing, or within the mainline distribution system, at a location(s) that will ensure the total take of water is measured; and</p> <p>(ii) install a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 15 minutes, and have the capacity to hold at least one season's data of water taken as specified in clauses (b)(i) and (b)(ii), and which is telemetered, as specified in clause (b)(iii).</p> <p>(b) The recording device(s) shall:</p> <p>(i) be set to wrap the data from the measuring device such that the</p> | | | |
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| | <p>oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and</p> <p>(ii) store the entire season's data in each 12 month period from 1 July to 30 June in the following year, which the consent holder shall then download and store and provide to the Canterbury Regional Council in a format and standard specified in the Canterbury Regional Councils form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorized by the Canterbury Regional Council: RMA Compliance and Enforcement Manager; and</p> <p>(iii) shall be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a</p> | | | |
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| | <p>commonly used format at all times to the Canterbury Regional Council and the consent holder.</p> <p>(c) No data in the recording device(s) shall be deliberately changed or deleted.</p> <p>(d) The measuring and recording devices described in clauses (a) shall be available for inspection at all times by the Canterbury Regional Council, including access to the data recorded in accordance with clause (b).</p> <p>(e) The water meter(s) and recording device(s) shall be installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.</p> <p>(f) All practicable measures shall be taken to ensure that the water meter(s) and recording device(s) are fully functional at all times and meeting the accuracy stated in condition (a).</p> | | | |
| 9. | (a) The water meter installed in accordance with Condition | Agree | n/c | Agree |

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| | <p>(8) shall be an electromagnetic or ultrasonic meter; or</p> <p>(b) The consent holder shall, before the first exercise of this consent install or make available an easily accessible straight pipe(s) at a location where the total water take is passing through, with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system, to allow the Canterbury Regional Council to conduct independent measurements.</p> | | | |
| 10 | <p>Within one month of the installation of the measuring or recording devices, specified in conditions (6) and (9) or any subsequent replacement measuring or recording device(s), or at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement</p> | Agree | n/c | Agree |

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| | <p>Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:</p> <p>(a) the measuring and recording device(s) is installed in accordance with the manufacturers specifications; and</p> <p>(b) data from the recording device(s) can be readily accessed and/or retrieved in accordance with clauses (b) and (c) of conditions (6) and (9).</p> | | | |
| 11. | <p>At five yearly intervals from the first August following commencement of this consent or at any time when reasonably requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying that:</p> <p>(a) the water flow measuring device and water meter are measuring the flows and rate of water taken as specified in conditions (6) and (9), and</p> <p>(b) the tamper-proof electronic</p> | Agree | n/c | Agree |

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| | recording devices are operating as specified in condition (6) and (9). | | | |
| 12. | The water meter and recording devices shall be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval. | Agree | n/c | Agree |
| 13. | The Canterbury Regional Council (Attention: RMA Compliance and Enforcement Manager) shall be informed immediately on first exercise of this consent by the consent holder. | Agree | n/c | Agree |
| Water use and related water quality conditions | | | | |
| 14. | Water for irrigation shall only be used on or applied to land that is subject to a memorandum of encumbrance that complies with the requirements of the agreement entitled " <i>Agreement in Relation to the Allocation of Water for Irrigation</i> " between Meridian Energy Limited and the Mackenzie Irrigation Company Limited dated the 31 st of October 2006. | Agree | Agree | Agree |
| 15. | The consent holder shall, six months prior to this consent being exercised, provide to the Canterbury Regional Council a certificate from the Consent | Agree Issue of map or title reference to be resolved with MEL. | Agree | Agree |

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| | Holder's solicitor certifying that the memorandum of encumbrance provided for in Condition 1 is registered on the computer registers for the land shown on Map ???? attached to and forming part of this consent, and any other evidence of registration as the Canterbury Regional Council may require (if any). | | | |
| 16. | All practicable measures shall be taken to: (a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and (b) Avoid leakage from pipes and structures; and (c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips. | Agree | Meridian's evidence sought that clause/s be included here that relate to irrigation depths. | n/c |
| | | | Meridian considers that all consents that are not conversions/renewals should be subject to pre-irrigation monitoring to establish adequate baseline information. Meridian's evidence is that more | This application is for a renewal of a small irrigation command area. The irrigation is converting from flood to spray irrigation. |

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| | | | <p>information is necessary.</p> <p>For renewal consents, Meridian acknowledges that there may be more information available, if it can be shown that the existing irrigation has been monitored adequately. In these situations, Meridian would be comfortable with no additional monitoring requirement.</p> <p>Meridian considers that all new consents should be required to undertaken pre-irrigation monitoring.</p> | |
| | | | <p>Meridian would also support staging for new consents to enable determination of actual effects as they occur rather than reactions once they have occurred. Meridian would be comfortable for smaller irrigation areas to not have such staging requirements.</p> | |
| Nutrient discharge allowance | | | | |
| 17. | (a) The annual (1 July to 30 June) nutrient loading (the nutrient discharge allowances (NDAs)) to water from Peak Valley shall not exceed 9,056 kg of nitrogen and 231 kg of | Agree | <p>Clause (b) requires compliance with the NDAs through modeling rather than actual monitoring and Meridian is not convinced this is sufficient. Too much reliance is placed on</p> | n/c |

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| | <p>phosphorus.</p> <p>(b) Compliance with this requirement shall be determined by farm nutrient modelling using the model Overseer[®] (AgResearch model version number 5.4.3 or later) undertaken by a person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification.</p> <p>(c) The NDAs shall be recalculated if there is a sale or transfer of any part, but not the whole, of the total farm area specified in Appendix C. The recalculated NDAs shall replace the NDAs specified in condition (17)(a). The recalculation of the NDAs shall be undertaken and certified by a person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification, and shall be completed and provided to the Canterbury Regional Council, Attention:</p> | | <p>modelling that may or may not reflect what is really happening in the environment.</p> | |
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| | RMA Compliance and Enforcement Manager together with a copy of the full Parameter report, within one month of the sale or transfer. | | | |
| 18. | The property shall be managed in accordance with the Peak Valley Overseer [®] model inputs specified in the attached Appendix C - Peak Valley Overseer [®] parameter report. Appendix C forms part of this consent. | Agree | n/c | Agree |
| 19. | <p>(a) Changes may be made to Appendix C Peak Valley Overseer[®] model inputs, provided that there is ongoing compliance with condition 17(a).</p> <p>(b) Any changes to the Peak Valley Overseer[®] model inputs shall be recorded immediately and made available, together with the corresponding Overseer[®] parameter report, on request by the Canterbury Regional Council.</p> <p>(c) The Canterbury Regional Council may once each year during August require of the consent holder that a person with an Advanced</p> | Agree | n/c | Agree |

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| | <p>Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification provides a written certification, and the resultant Overseer[®] parameter report, to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, that they have modelled the change using Overseer[®] and that the result of that modelling demonstrates that the NDAs are not exceeded.</p> | | | |
| 20. | <p>(a) Detailed records shall be maintained of nutrient inputs to the nearest kilogram, types of crops, cultivation methods, stock movements and yields, and a report based on Overseer[®] modelling shall be provided within five years of the commencement of this consent and at five yearly intervals afterwards on nutrient loading to water from Peak Valley.</p> <p>(b) These reports shall be provided within one month of completion to the</p> | Agree | n/c | Agree |

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| | Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and shall be undertaken by a person with an Advanced Sustainable Nutrient Management Certificate issued by Massey University or an equivalent qualification. | | | |
| Mandatory On Farm Management Conditions | | | | |
| | | | Meridian supports the concept of FEMPs and considers that this concept could be included to provide more certainty to all parties. There needs to be a clear link between the verification through modelling, actual compliance with NDAs, and monitoring to understand actual effects. | Agree |
| 21. | Fertiliser shall be managed and applied in accordance with 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07'. | Agree | Meridian considers that it is necessary to include testing/calibration conditions for equipment used for fertilizer application – as have been applied in other condition sets. This appears to be covered in condition 25 below and Meridian recommends these conditions be re-ordered to group | n/c |

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| | | | fertilizer issues and then irrigation issues. | |
| 22. | All new (not on the property at the time of commencement of this consent) irrigation infrastructure shall be designed and installed in accordance with the 'Irrigation Code of Practice and Irrigation Design Standards, Irrigation NZ, March 2007' and the design and installation shall be certified in writing by a suitably qualified expert. A copy of that certification shall be provided to the Canterbury Regional Council on request. | Agree | n/c | Agree |
| 23. | (a) All irrigation infrastructure shall be tested within 12 months of the first exercise of this consent and afterwards every five years in accordance with the 'Irrigation Code of Practice and Irrigation Design Standards, Irrigation NZ, March 2007' (code of practice) by a suitably qualified independent expert. (b) The expert shall prepare a report within two months of the testing, outlining their findings and shall identify any changes needed to | Agree | Meridian considers the 2 month reporting period to be good, but considers that the 5 year upgrade timeframe in clause (c) to be too long. If recommendations are made that changes are necessary to irrigation structures to avoid adverse effects then 5 years is inappropriately lengthy. Meridian considers it is appropriate to make the most rapid transition to best practice that is possible. | Agree with Meridian |

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| | <p>comply with the code of practice.</p> <p>(c) Any changes needed to comply with this code of practice shall be implemented within five years from the date of the report. A copy of the report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, within three months of the report being completed.</p> | | | |
| 24. | <p>Nitrogen fertiliser shall not be applied to land between 31 May and 1 September in any year except for the use of nitrification inhibitors.</p> | Agree | n/c | Agree |
| 25. | <p>(a) All fertiliser (organic and inorganic) applicators and spreaders shall be tested and calibrated within 12 months of the first exercise of this consent and afterwards every five years by a suitably qualified independent expert.</p> <p>(b) The expert shall prepare a report within two months of the testing, outlining their findings and shall identify any changes needed to</p> | Agree | <p>Again, Meridian considers the 2 month reporting period to be good, but considers that the 5 year upgrade timeframe in clause (c) to be too long. If recommendations are made that changes are necessary to irrigation structures to avoid adverse effects then 5 years is inappropriately lengthy. Meridian considers it is appropriate to make the most rapid transition to best practice that is possible.</p> | Agree with Meridian |

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| | <p>comply with the 'The Code of Practice for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07' (code of practice).</p> <p>(c) Any changes needed to comply with this code of practice shall be implemented within five years from the date of the report. A copy of the report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, within three months of the report being completed.</p> | | | |
| 26. | All fertiliser brought onto the property which is not immediately applied to land shall be stored in a covered area that incorporates all practicable measures to prevent the fertiliser entering waterways. | Agree | n/c | Agree |
| 27. | Fertiliser filling shall not occur within 50m from a watercourse, spring or bore. | Agree | n/c | Agree |
| Lake Water Quality Monitoring and Mitigation | | | | |
| 28. | The water quality of Lake Benmore shall be monitored as follows: | Agree | This condition has taken the management plan approach proposed in other condition sets and converted it into a | Agree |

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| | <p>(a) Locations: Haldon (Northern) Arm, Map reference: NZMS 260 H39:8823-3531 or NZTopo50 CA15:7828-7366, and Lower Benmore, Map reference: NZMS 260 H39:8802-2371 or NZTopo50 CA16:7808-6205. The monitoring site locations are shown in Appendix B which is attached to and forms part of this consent.</p> <p>(b) Depths: depth integrated 0-10m, 25m, 50m</p> <p>(c) Water quality variables: total nitrogen, total phosphorus, Secchi disc depth, and chlorophyll a.</p> <p>(d) Calculated key water quality variable: Trophic Lake Index (TLI), using the following equations:</p> <p>(i) $TL_c = 2.22 + 2.54 \log(\text{chlorophyll } a)$</p> <p>(ii) $TL_p = 0.218 + 2.92 \log(\text{total$</p> | | <p>condition. While it provides more detail than comparable conditions in other condition sets, it is difficult to know if it is sufficient as it is so simplified.</p> <p>Meridian supports the use of management plans. These have been accepted by both the industry and the Court as appropriate to provide flexibility in a changing and dynamic environment, and a contemporary method of dealing with potential effects. However, Meridian notes that to be lawful and effective, management plans require the use of strong objectives set out in conditions of consent and is not convinced these conditions are sufficient.</p> <p>Use of terminology like “The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring lake water quality” is simply too uncertain for monitoring or enforcement and reads more like guidance than a condition</p> | |
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| | <p>phosphorus)</p> <p>(iii) $TLn = -3.61 + 3.01 \log(\text{total nitrogen})$</p> <p>(iv) $TLI = \frac{\sum (TLc + TLp + TLn)}{3}$</p> <p>(e) Frequency of monitoring: Once per month from 1 December to 30 April each year, with a minimum of three weeks between sampling.</p> <p>(f) Methods: The methods of sampling and analysis shall be those that are generally accepted by the scientific community as appropriate for monitoring lake water quality. The methods of sampling shall be documented and made available to the Canterbury Regional Council on request.</p> <p>(g) The water quality monitoring shall be undertaken by a person with a relevant tertiary qualification that</p> | | <p>of consent.</p> | |
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| | <p>demonstrates that they understand the appropriate methods to use for lake water quality sampling, including depth integrated sampling, and preservation of samples. That person shall certify in writing that each batch of samples has been sampled and preserved in accordance with generally accepted scientific methods. A copy of those certifications and the person's qualifications shall be provided to the Canterbury Regional Council on request.</p> <p>(h) The laboratory undertaking analyses shall be accredited for those analyses by an accreditation authority such as International Accreditation New Zealand (IANZ) or an equivalent accreditation organisation that has Mutual Recognition Agreement with IANZ.</p> | | | |
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| | <p>(i) The results of all sampling including calculated average summer TLI shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager by 30 May each year. This shall include copies of all sample result reports from the laboratory that undertook the analyses.</p> <hr/> <p><i>Advice Note: It is anticipated that all consent holders subject to this water quality monitoring requirement would coordinate and cooperate together to ensure that the lake water quality monitoring is undertaken and the costs of that monitoring is shared between those consent holders. The Canterbury Regional Council will provide resources to facilitate that coordination and the costs of that facilitation will be recoverable from the relevant resource consent holders as a cost of supervising and administering the resource</i></p> | | | |
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| | <i>consents. Any non-compliance with water quality monitoring requirements would be a matter for all relevant consent holders.</i> | | | |
| Trigger response conditions | | | | |
| | | | Meridian's evidence has maintained the position that each consent does not operate independently of the others in terms of the potential effects on the wider catchments and river/lake systems. Meridian considers that there is a need for wider monitoring (nodal or sub catchment) in addition to individual monitoring and a need for responsibility to be taken on a collective basis. | Agree |
| 29. | (a) If the monitoring undertaken in accordance with condition (28) shows that the average TLI for the 1 - 10 m depth integrated samples for the Haldon (Northern) Arm site over the period December to April is greater than 2.5 (early warning trigger) but does not exceed 3.0 (environmental standard trigger), then the property nutrient loads, as specified in condition (17), shall be reduced by 5% x | Agree | The concept of the IPF is new and Meridian is not aware of any evidence being given on this idea. It may have some merit but would also appear to allow greater flexibility than has been anticipated in evidence to date e.g. allowing intensification of drylands of irrigation areas. Meridian's evidence is that a TLI of 3.0 as the environmental standard | Agree with approach, Meridian comments re triggers has merit. |

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| | <p>40/4228 Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area authorised for irrigation under this resource consent divided by the total farm area, as specified in Appendix C.</p> <p>(b) If the monitoring undertaken in accordance with condition (28) shows that the average TLI for the 1 - 10 m depth integrated samples over the period December to April is greater than 2.5 but does not exceed 3.0, then a report into the cause of the breach of the early warning trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.</p> <p>(c) If a reduction in nutrient loading is required under any part of this condition and monitoring in the period that</p> | | <p>trigger is too high. Meridian notes that 2.75 has been recommended as the summer average and would be agreeable to this as the higher threshold with a lower early warning trigger of 2.5 for the Haldon Arm.</p> <p>Meridian is reasonably comfortable with the degree of proposed reductions as being reasonable reactions to trigger levels being breached. However, Meridian is concerned that the timing may not be responsive enough. If a trigger level is breached early in the irrigation season, the actual reduction would not occur until the following irrigation season allowing a delay of some 12 months before a response. This could potentially contribute to adverse environmental effects.</p> <p>Meridian is generally happy with the system of early warning triggers and environmental standard triggers, continued monitoring, reductions, release of</p> | |
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| | <p>that reduction applies shows that the average TLI for the 1 – 10 m depth integrated samples for the monitoring site over the period December to April continues to be greater than 2.5 but does not exceed 3.0 then there shall be a further property nutrient load reduction of 5% x IPF for the subsequent irrigation season.</p> <p>(d) The above nutrient load reductions and investigation (condition 29 (a)-(c)) shall not be required if a two person expert panel with one expert nominated by the Canterbury Regional Council both conclude after considering all the relevant available information including catchment resource consent compliance and audit reports made available by the Canterbury Regional Council, that the cause of the breach of the early warning trigger was highly unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent.</p> <p>(e) If a required reduction in</p> | | <p>reductions if quality improves, etc and is generally happy with the concept of having two experts determine responsibility for quality issues.</p> | |
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| | <p>nutrient load is in effect under this condition and monitoring for that period shows that the average TLI for the 1 – 10 m depth integrated samples for the monitoring site over the period December to April is less than 2.5, then for the subsequent season the full NDA for the property, as specified in condition (17) shall apply.</p> | | | |
| 30. | <p>(a) If the monitoring undertaken in accordance with condition (28) shows that the average TLI for the 1 - 10 m depth integrated samples for the Haldon (Northern) Arm monitoring site over the period December to April is greater than 3.0 (environmental standard trigger), then the property nutrient load, as specified in condition (17), shall be reduced by 20% x Irrigation Proportion Factor (IPF) for the irrigation season subsequent to the monitoring period. The IPF shall be the proportion of the area authorised for irrigation under this resource consent divided by the total farm area, as</p> | Agree | | Consider trigger points as suggested by Meridian |

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| | <p>specified in Appendix C.</p> <p>(b) If the monitoring undertaken in accordance with condition (28) shows that the average TLI for the 1 - 10 m depth integrated samples over the period December to April is greater than 3.0 for either the Haldon (Northern) Arm or the Lower Benmore monitoring sites, then a report into the cause of the breach of the environmental standard trigger shall be prepared by a person with an appropriate post-graduate science qualification, by 30 July following the sampling. A copy of this report shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, by 30 August following the sampling.</p> <p>(c) If a reduction in nutrient loading is required under any part of this condition and monitoring in the period that that reduction applies shows that the average TLI for the 1 - 10 m depth integrated samples for the Haldon (Northern) Arm monitoring</p> | | | |
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| | <p>site over the period December to April continues to be greater than 3.0 then there shall be a further property nutrient load reduction of 20% x IPF for the subsequent irrigation season.</p> <p>(d) The above nutrient load reductions and investigation (condition 30 (a)-(c)) shall not be required if a two person expert panel with one expert nominated by the Canterbury Regional Council both agree that the cause of the breach of the environmental standard was highly unlikely to have been caused in whole or in part by nutrient loss associated with the irrigation authorised by this consent.</p> <p>(e) If a required reduction in nutrient load is in effect under this condition and monitoring for that period shows that the average TLI for the 1 – 10 m depth integrated samples for the Haldon (Northern) Arm monitoring site over the period December to April is less than 3.0, then for the subsequent season no</p> | | | |
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| | property nutrient load reduction shall be required under this condition. | | | |
| Additional Site Specific Conditions | | | | |
| 31. | Within or immediately adjacent to the irrigation areas there shall be a no grazing riparian margin of at least 10 metres width maintained adjacent to all rivers or streams. | Agree | Meridian supports this condition. | Agree |
| 32. | There shall be a landscape buffer margin of at least 300 metres width maintained adjacent to Lake Benmore within which there shall be no irrigation. | Agree | Meridian supports this condition. | Agree |
| 33. | Within or immediately adjacent to the irrigation areas stock shall be excluded from entering any surface water bodies on the property by fencing or other effective means. | Agree | Meridian supports this condition. | Agree |
| 34. | The consent holder shall ensure that the 10 metre riparian margins adjacent to irrigation areas are planted and maintained with appropriate plant species. The planting shall consist of, but not limited to: (a) Trees and shrubs along the outer zone of the riparian planted area; and (b) Sedges, flaxes, indigenous grasses along the stream | Agree | Meridian supports this condition. | Agee |

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| | margin. | | | |
| 35. | Within or immediately adjacent to the irrigation areas there shall be no application of water or fertiliser to land within 60 metres of any river, stream or lake. | Agree | Meridian supports this condition. | Agree |
| 36. | Applications of nitrogen fertiliser shall not exceed 50 kg nitrogen/ha per application. | Agree | Meridian supports this condition. | Agree |
| 37. | Any silage made from the irrigation areas shall be managed to avoid any unauthorised discharges of silage liquor. | Agree | Meridian supports this condition. | Agree |
| Administration | | | | |
| 38. | <p>The Canterbury Regional Council may, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:</p> <p>(a) Dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or</p> <p>(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.</p> | Agree | n/c | Agree |

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| | (c) Amending the specified flow in Shepherds Creek at which abstraction is required to cease as set out in condition (5). | | | |
| 39. | The lapsing date for the purposes of section 125 of the Resource Management Act shall be 10 years after the date of resource consent commencement. | Agree | n/c | Agree |
| 40. | This resource consent shall expire 35 years after the date of commencement. | Agree | n/c | Agree |

