

In the matter of the Resource Management Act 1991

And

In the matter of an application for Resource Consents by Oceania Dairy Limited to construct and operate a pipeline to discharge treated wastewater into the ocean.

**STATEMENT OF EVIDENCE OF SUKHDEEP (SUKHI) KAUR SINGH
FOR OCEANIA DAIRY LIMITED
(PLANNING)
28 May 2020**

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INTRODUCTION

- 1 My full name is Sukhdeep (Sukhi) Kaur Singh. I have been engaged by Oceania Dairy Limited (ODL), the applicant, to provide this planning evidence.
- 2 I hold the position of Principal Planner with Babbage Consultants Limited (Babbage), based in the company's Auckland office. I have a Bachelor of Arts (Urban and Economic Geography) Degree from University of Toronto and Master of Planning Practice (Honours) Degree from University of Auckland. I have 21 years of planning and resource management experience. I am a full member of the New Zealand Planning Institute. I am accredited under the Ministry for the Environment Making Good Decisions programme as an Independent Commissioner.
- 3 During my planning career, I have worked both in the public and private sector. In these roles, I have gained considerable experience in RMA processes, including: district plan reviews; preparation and processing of plan changes (both council initiated and private requests); resource consent application preparation and processing; designation process; and Environment Court appeals resolution process.
- 4 In relation to the matters relevant to this hearing, I have considerable experience with resource management issues associated with infrastructure. I was the lead planner for the Infrastructure Topic for Auckland Council in the preparation of the Auckland Unitary Plan. In this role, I was the author of a number of section 42A reports as a planning expert on behalf of Auckland Council, including: Chapter E26 Infrastructure and Chapter E29 Emergency Management Area – Hazardous Facilities and Infrastructure. In this role, I was also responsible for the resolution of all appeals within the umbrella of the Infrastructure Topic, lodged with the Environment Court on the Decisions version of the Auckland Unitary Plan.
- 5 With respect to resource consent application process, in my role as a Principal Planner with Babbage, I assist our clients with the preparation of resource consent applications. I am also engaged by Auckland Council to process and make recommendations on decisions to the Council on resource consent applications meeting the complex category.
- 6 I am familiar with the area subject to this resource consent application by ODL. I have visited the Oceania Dairy Factory (Factory) site and travelled the full length of the proposed pipeline route corridor along Cooneys Road and Archibald Road. I have also viewed the location of the proposed marine outfall from the adjoining coast at the end of Archibald Road.
- 7 I was part of the team engaged by ODL to assist with the preparation of the resource consent application to authorise the construction, operation and maintenance of the wastewater pipeline and marine outfall. I have been involved with this project since early 2018. I am the author of

the “Oceania Dairy Factory Wastewater Pipeline and Outfall Assessment of Effects on the Environment Report” (AEE), dated 30 August 2019, forming part of the resource consent application package lodged with Canterbury Regional Council (ECAN).

8 I have read the following documents to assist with the preparation of my evidence:

- a) The notified resource consent application package.
- b) The requests for further information under section 92 of the RMA and the applicant’s responses.
- c) Submissions received.
- d) The Hearings (section 42A) Report by Kelly Walker.
- e) The technical expert reports on behalf of ECAN.

9 I have read the following evidence in chief prepared on behalf of ODL:

Name	Title	Area of expertise
Shane Lodge	Supply and Environment Manager, ODL	
Paul Duder	Principal Project Manager, Babbage	Project management
Suman Khareedi	Infrastructure Business Manager, Babbage	Specimen design and construction methodology
Nathanial Wilson	Lead Environmental Scientist, Babbage	Water quality
Lobo Coutinho	Senior Environmental Engineer, Babbage	Dispersion modelling, coastal hazards and groundwater
Annabelle Coates	Ecologist, Bioresearches/Babbage	Ecological effects
Rebecca Scott	Environmental Scientist (microbial risk assessment), NIWA	Effects on human health
Rob Greenway	Principal, Rob Greenway and Associates	Recreational effects

10 I have also read the Cultural Impact Assessment (dated 13 March 2019) prepared by Aukaha on behalf of Te Rūnanga o Waihao.

CODE OF CONDUCT

11 While this is a Council Hearing, I acknowledge that I have read and am familiar with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014, and agree to comply with it. I confirm that this evidence is within my area of expertise, except where

I state that this evidence is given in reliance on another person's evidence. I have considered all material facts that are known to me that might alter or detract from the opinions I express in this evidence.

SCOPE OF EVIDENCE

- 12 The brief of my evidence is to conduct a careful analysis of the relevant provisions of the various planning instruments, and thereby, provide an evaluative planning evidence to assist the Commissioners to form a decision on the resource consent application lodged by ODL.
- 13 In this statement of evidence, I address the following:
- a) Background and existing resource consents held by ODL.
 - b) An overview of the proposal.
 - c) The activity status of the application.
 - d) Summary of actual and potential effects on the environment of allowing the proposal (section 104(1)(a) of the RMA).
 - e) Consideration of relevant planning documents (section 104(1)(b) of the RMA).
 - f) Proposed resource consent conditions – section 108 of the RMA.
- 14 In my opinion this application needs careful consideration in relation to the concerns raised by the submitters on the application. Accordingly, I have attempted to assist the Hearings Panel by relating the potential effects of most concern directly to the relevant provisions of the RMA. The issues that I focus on are:
- a) Effects on water quality of the receiving environment
 - b) Effects on human health
 - c) Effects on recreational activities
 - d) Effects on ecology
 - e) Effects associated with coastal hazards and coastal processes
 - f) Effect on cultural values
 - g) Cumulative effects
 - h) Construction effects

BACKGROUND AND EXISTING RESOURCE CONSENTS

- 15 The Oceania Dairy Factory (Factory) is being expanded progressively in three stages, to deliver the outcomes planned as part of the master planning of the Factory site. Table 1 in Appendix 1

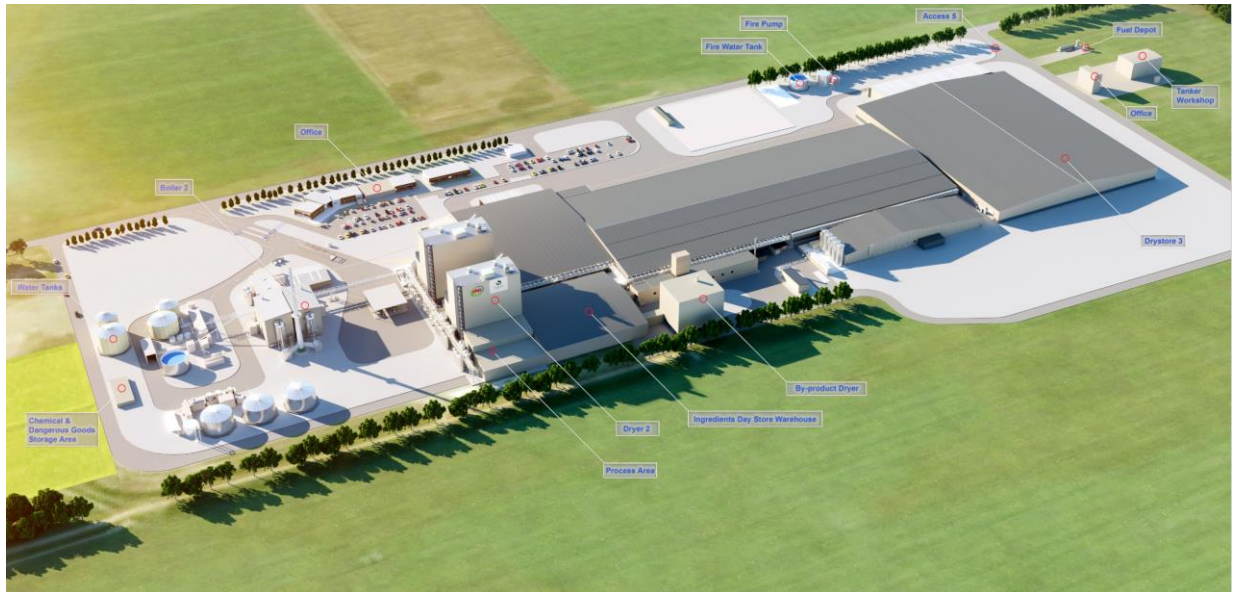
provides a description of the works forming part of each of the three stages of development. As explained by Mr Lodge on behalf of ODL, Stages 1 and 2 enabled the establishment, operation and maintenance of the milk processing facility at Oceania Dairy Factory site. Stages 1 and 2 have largely been implemented (with the new Laboratory approved under Stage 2b currently under construction).

16 In the memo dated 12 May 2020, the Hearing Panel requested details pertaining to Stage 3 of the planned development. On 12 August 2019, Waimate District Council approved land use resource consent number RM180046 to enable the expansion of the Oceania Dairy Factory (aligning with works forming part of Stage 3). The Decision of the Waimate District Council, including the approved conditions and drawings are contained in Appendix 2.

17 Resource consent RM180046 enables the expansion of the existing industrial activity and the construction of the following additional buildings on the Factory site (see Figure 1 below):

- A second dryer tower (Dryer 2) with process area and ingredients dry store warehouse. Dryer 2 is 56m in height.
- A by-product dryer (to supercede the dryer approved in Stage 2b, with the same dimensions, details and capacity, but in a different location). By-product dryer is 27m in height.
- A second boiler (Boiler 2). Boiler 2 is 23m in height.
- A third drystore (Drystore 3) with an attached environmental loadout area on the northern face of the building. Drystore 3 is 13m in height.
- An office.
- A tanker workshop, fuel depot, and office and drive facilities room.
- A fire pump house building and water tank at the east end of the site to service proposed Drystore 3.
- A compound to store chemical and dangerous good in one place at the western end of the site.
- a new site access (Access 5).

Figure 1: Site Plan approved under resource consent RM180046



18 Waimate District Council approved resource consent RM180046, subject to compliance with specified conditions. The key conditions of consent include the following requirements:

- pre-approval of a Temporary Construction Traffic Management Plan and a Construction Management Plan prior to the commencement of works.
- upgrading of parts of Cooneys Road prior to the construction of the Dryer 2 and Boiler 2.
- upgrading of State Highway 1 and Cooneys Road intersection.
- mitigation planting.
- preparation and implementation of a Lighting Plan.
- exterior of buildings to be finished in subdued natural colours so that it will blend in with the rural landscape.
- accidental discovery protocol to be followed.
- compliance with specified noise standards.

19 Waimate District Council accepted a staged consenting approach to enable the full implementation of Stage 3 works. In addition to the land use resource consent RM180046, regional resource consents (such as earthworks, air discharge and wastewater discharge) are required from ECAN prior to the operation of the expanded facility. Should the current application for wastewater discharge consent be approved, the next step is to prepare an application for an air discharge consent.

20 In the memo dated 12 May 2020, the Hearing Panel requested copies of conditions of resource consents that are relevant to this application. Table 2 in Appendix 1 sets out the resource consents currently held by ODL. In brief, these are:

- RM090044, RM130004, RM150050, RM160017, RM160034 and RM180046 - Land use consents applying to the Factory site.
- CRC146249 and CRC175783 - Water permit to take and use groundwater.
- CRC141965 and CRC172337 - Discharge contaminants to air.
- CRC166121 - Discharge stormwater to land.
- CRC171312 - Discharge of domestic wastewater from the Factory.
- CRC164414 and CRC174198 - Discharge of Factory wastewater to land.

21 ODL is not seeking to change, nor surrender the approved resource consents currently held by ODL as part of this resource consent process. As ODL seeks to maintain the existing land based factory wastewater irrigation system in conjunction with the proposed marine outfall, I have included copies of Discharge Permits CRC164414 and CRC174198 (to discharge factory wastewater to farmland) in Appendix 3. I also consider land use resource consent RM180046 approved by Waimate District Council for Stage 3 expansion to be relevant to this application, and have attached the approved conditions of consent in Appendix 2.

OVERVIEW OF THE PROPOSAL

22 The proposal is explained in the application material, section 42A report and other evidence. In brief, the key elements of the proposal are:

- a) Construction of a pipeline below ground from the Wastewater Treatment Plant (WWTP) located on the Factory site, traversing a distance of approximately 7.5km along a “route corridor” to the coast (Pacific Ocean). Once leaving the Factory site, the pipeline is to be located within the road reserve area of Cooneys Road, then directed north and then east within the road reserve area of Archibald Road until it reaches the coast.
- b) The marine outfall comprises of:
 - A 300 - 450mm diameter pipeline along the 7.5km “route corridor”;
 - A 350m long submerged outfall, with an array of 3 diffusers at the end of it, extending a further 50m to 150m, to discharge treated and clean wastewater into the Pacific Ocean.
- c) Construction of an approximately 500m long outfall pipe (including the diffuser section) immediately seaward and perpendicular to the shoreline.
- d) The marine outfall is designed to discharge up to 10,000m³ / day (116L/s).
- e) The diffusers are designed to achieve a dilution of the wastewater of 300-fold or greater within 10m to 50m of the marine outfall.

- f) The “reasonable mixing zone” is the area within 50m of the physical footprint of the diffuser.
- g) Undertake earthworks associated with the construction of the pipeline and marine outfall infrastructure.
- h) Take groundwater for dewatering purposes and discharge of dewatering water to land or water for the purposes of construction of pipeline infrastructure.
- i) Reinstatement of all pipeline construction works, removal of all temporary works and reinstatement of the site.
- j) Discharge of treated wastewater into the Pacific Ocean following commissioning of the pipeline and marine outfall.
- k) The existing wastewater irrigation system is to be maintained and used in conjunction with the proposed outfall discharge to actively manage the volumes of wastewater discharge into the coastal waters.

THE ACTIVITY STATUS OF THE APPLICATION

- 23 Resource management documents at the regional level that are relevant to the assessment of this application are:
- Canterbury Regional Policy Statement (CRPS) 2013.
 - Regional Coastal Environment Plan for the Canterbury Region (RCEP) 2005
 - Canterbury Land and Water Regional Plan (LWRP) 2015
- 24 Plan Change 7 to the LWRP was notified on 20 July 2019. In addition to other matters, Plan Change 7 proposes to amend Rules 5.175 and 5.176. Rule 5.175 sets out the permitted activity standards for use of land to excavate material over aquifers. This application proposes earthworks over the Waitaki Gravel Aquifer, which is a “unconfined or semi-confined aquifer” under Rule 5.175(2). Plan Change 7 seeks to amend Rule 5.175 to change the reference to “seasonal high water table” to “highest groundwater” level. Activities that do not comply with Rule 5.175 are a restricted discretionary activity, and the relevant matters of discretion are set out in Rule 5.176. Plan Change 7 seeks to amend Rule 5.176 to introduce a new matter of discretion: “Any adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga”.
- 25 Under section 104(1) of the RMA, when considering an application for resource consent, the consent authority must have regard to a proposed plan (which includes Plan Change 7). In

terms of the weight to be given to Plan Change 7, Canterbury Regional Council notes on its website that the rules in Plan Change 7 are now legally effective. For the purposes of this application, amendments to Rule 5.175 and 5.176 proposed in Plan Change 7 have been considered in determining the triggers of resource consent and the assessment of the application. I do note, however, that Plan Change 7 is yet to be tested by submitters at the hearing process. Therefore, the rules as currently proposed may be amended from their current form.

- 26 Having reviewed the relevant resource management documents, Table 1 sets out the classifications of the various activities proposed within the coastal permit application, deemed as triggers for resource consent under the provisions of the RCEP.

Table 1: Activity classification under the provisions of RCEP

Activity	RMA section	Rule (RCEP)	Activity Classification	Resource Consent number
Erection and placement of structures in the Coastal Hazard Zones	s9	9.2	Restricted Discretionary	CRC201188
Disturbance of CMA and removal of material from the CMA	s12	8.7	Discretionary	CRC201190
Erection of structure in the CMA	s12	8.2	Discretionary	CRC201190
Erection or placement of structure in the CMA	s12	8.3(c)	Discretionary	CRC201190
Discharge of water and contaminants to the CMA	s15	7.2	Discretionary	CRC201194
Permanent occupation of the CMA	s12	8.23	Discretionary	CRC201190
Deposition of material on the foreshore / CMA	s12	8.12	Discretionary	CRC201190

- 27 Table 2 sets out the classifications of the various activities proposed within the land use application, deemed as triggers for resource consent under the provisions of the LWRP.

Table 2: Activity classification under the provisions of LWRP

Activity	RMA section	Rule (LWRP)	Activity Classification	Resource Consent number
Earthworks over unconfined or semi-confined aquifer	s9	5.176	Restricted Discretionary	CRC201187
Take of groundwater for dewatering during construction	s14	5.120	Restricted Discretionary	CRC201191
Discharge of dewatering water to land or water	s15	5.120	Restricted Discretionary	CRC201192

28 Table 1 show that the activity classifications are either restricted discretionary or discretionary under the provisions of the RCEP. Table 2 shows the activity classification as being restricted discretionary under the LWRP.

29 Activities that are intricately related are normally “bundled” together for resource management purposes, and the most stringent activity status applies. Noting that there are two distinct parts to this application (i.e. activities within the CMA and activities outside the CMA), I consider that activities in Table 1 can be bundled separately from activities in Table 2. As such, the proposal is deemed to be a discretionary activity under the RCEP and restricted discretionary activity under the LWRP. This aligns with the approach taken by Ms Walker in the section 42A report.

30 The application notes that majority of the wastewater pipeline is to be located along a “route corridor” within the road reserve area of Cooneys Road and Archibald Road. The Hearings Panel has sought clarification as to whether there are any legal or otherwise impediments to ensure that this can be achieved. In this regard, the Waimate District Plan is relevant to the section of the wastewater pipeline located between the Factory site and the boundary of the CMA. Under the Waimate District Plan provisions, the proposed works forming part of this application will be permitted activities, and do not trigger the need for resource consent. This is set out in Section 6.2 of the AEE. In brief:

- The wastewater pipeline falls within the definition of a “utility” under Section 13 (Definitions) of the Waimate District Plan.
- Above and below ground networks for the conveyance of factory treated wastewater is a permitted activity, provided that they comply with identified site-specific standards. The specified standards do not apply to the land along the pipeline route.
- The Waimate District Plan does not identify any Significant Natural Areas, Outstanding Natural Landscapes or Features, Significant Natural Features, nor any protected scheduled items within the proximity of the proposed pipeline or the marine outfall.

- 31 The applicant has consulted with the Waimate District Council staff as to the feasibility of locating the pipeline within the identified route corridor. Appendix 4 contains a letter from Mr Robert Moffat (Roading Manager, Waimate District Council), confirming that Waimate District Council is aware of the proposed wastewater pipeline proposal by ODL, and in principle agrees to the pipeline being located within the Cooneys and Archibald Legal Road Reserve. Landowner approval will be obtained from Waimate District Council prior to works within the route corridor. In addition, the interpretation of the Waimate District Plan rules was confirmed by the Waimate District Council planning staff.
- 32 KiwiRail have lodged a neutral submission, noting that the proposed pipeline is to pass under the Main South Railway Line and KiwiRail approval will be required to legally install the pipeline within the designated land. The applicant has consulted with KiwiRail in regards to this matter. On behalf of KiwiRail, Mr Ian Turner, Engineering Team Leader Civic and Track, has outlined the process to be followed and the requirements / standards to be met for works to be conducted in the KiwiRail corridor. It has been agreed with Mr Turner that based on the information required to be submitted to get a Deed of Grant from KiwiRail, the applicant could apply for the Deed of Grant at the end of completing the specimen design process. An application for permission to dig will be applied for after the detailed design stage is completed.
- 33 Transpower NZ notes that the Glenavy-Timaru national grid transmission line intersects a section of the proposed wastewater pipeline. Transpower seeks that an advice note be included in the conditions of consent referring to the need to comply with the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP 32: 2001). ODL supports the inclusion of this note. The applicant further notes that compliance with this Code is mandatory, and all necessary permissions will be obtained from the electricity infrastructure operator.

SECTION 104(1) - ASSESSMENT OF ACTUAL AND POTENTIAL EFFECTS ON THE ENVIRONMENT

- 34 Under section 104(1)(a), when considering an application for resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to any actual and potential effects on the environment of allowing the activity.
- 35 Canterbury Regional Council received 127 submissions on this application. Ms Walker provides an overview of the submissions in the section 42A report¹. 119 of these submissions are in opposition to the application. These submitters are genuinely concerned about the adverse effects of treated factory wastewater discharge into the Pacific Ocean. In light of the concerns

¹ Pages 7 and 8 of Part A of the section 42A Report by Kelly Walker.

raised by the submitters, and taking advice from appropriate experts, I consider that the effects set out below require specific consideration in respect of this application. A detailed assessment of actual and potential effects is contained in Section 7 of the AEE. In the section 42A report, Ms Walker has comprehensively reviewed the findings of the AEE based on the input from Canterbury Regional Council experts. There is a high level of agreement between her planning assessment and mine (as contained in the AEE). Where there are any matters of disagreement, I have stated so in my evidence. In order to avoid duplication of the section 42A report and the AEE, I have only summarised the key actual and potential effects on the environment below.

Effects on water quality

- 36 RCEP identifies classes of coastal waters and minimum standards of water quality for specified areas of coastal waters within the Canterbury Region. However, there are areas where water quality classes for parts of the CMA have not been established. The proposed ocean outfall is located within a CMA area where the RCEP has not established water quality classes. As such, the provisions of RCEP (in particular Policy 7.1) are concerned with maintaining the quality of the coastal water. Under Policy 7.1(b), the discharge shall not have any more than minor adverse effect on the quality of the water existing prior to the granting of the resource consent, but the Policy recognises the assessment of the discharge will be after “reasonable mixing”.
- 37 In Technical Report 1, Water Quality Assessment Report, Dr Wilson sets out the potential effects of the proposed treated wastewater discharge on the water quality of the receiving coastal environment. He also sets out the methodology for determining the ambient water quality of the coastal waters in the part of the CMA within which the proposed marine outfall is to be located. Based on the proposed method of wastewater treatment, Dr Wilson derived water quality parameters for the treated wastewater, which are proposed to be included in the conditions of consent.
- 38 Dr Wilson notes that the design of the outfall will achieve at least 300 times dilution within 50m in calm conditions and at the maximum proposed volume of 10,000m³/day (equivalent to 116 L/s). Modelling indicates at least 500 times dilution during normal weather and tidal conditions.
- 39 Dr Wilson states that the receiving marine environment is pristine. Any discharge to this environment must aim to meet the strictest relevant guidelines for environmental protection. Dr Wilson concludes that the proposed wastewater discharge will be treated sufficiently that the effects on the receiving water quality will be less than minor, even in calm conditions when there may be less dilution than under normal weather conditions. Even within the zone of reasonable mixing, modelling indicates adverse effects related to water quality are very unlikely.

- 40 On behalf of ECAN, Dr Wilson's assessment was reviewed by Dr Bolton-Richie. There is a high level of agreement between Dr Wilson and Dr Bolton-Richie regarding the effects of the proposal on receiving water quality. The points of agreement and disagreement are set out in Dr Wilson's evidence in chief.
- 41 The key point of disagreement is in relation to the matter of phytoplankton booms. Dr Bolton-Richie considers that the worst case scenario, in calm conditions, 300 times dilution will occur, and in this case, the trigger values for dissolved inorganic nitrogen and dissolved reactive phosphorous will not be met². Dr Bolton-Richie states that because of these two contaminant exceedances, and given that visible phytoplankton booms have been recorded previously along the South Canterbury coastline, there is potential for discharge to increase the occurrence of phytoplankton booms along the South Canterbury Coastline³.
- 42 Dr Wilson states in his evidence in chief that he shares the general concerns Dr Bolton-Ritchie raises about the potential effects of nutrient loading, but he considers that Dr Bolton-Ritchie has overstated the actual risks of the proposal. He is in agreement with Dr Bolton-Ritchie, for coastal algal blooms nitrogen is the limiting nutrient, but he reiterates that blooms along the South Canterbury Coast are contingent on more than just nutrient availability. He states that increased algal growth, in particular the development of algal blooms requires consistent temperatures, generally calm conditions and extended periods of time (in the order of weeks or months). Dr Wilson states such conditions are very unlikely to persist long enough about the proposed outfall. This is reiterated in the evidence of Mr Coutinho, who identifies that the "worst case" calm conditions generally do not occur for periods longer than three hours. Dr Wilson maintains that a 1% "exceedance" for dissolved inorganic nitrogen will not lead to more than minor effects on the observed frequency of algal blooms, especially since such exceedances will only occur in calm conditions that are unlikely to persist beyond a matter of hours.
- 43 Adopting the advice of Dr Wilson, I consider that subject to compliance with the proposed conditions, the effects of the wastewater discharge on the water quality of the receiving environment will be less than minor.

Effects on human health

- 44 An assessment of the potential effects of the wastewater discharge on human health is set out in Technical Report 10, Microbial Risk Assessment Report (hereon referred to as the NIWA Report), by National Institute of Water and Atmospheric Research Limited. The effects on human health are also discussed in evidence in chief of Rebeca Stott (NIWA).

² Paragraph 194 of Part A of the section 42A Report.

³ Paragraph 195 of Part A of the section 42A Report.

- 45 NIWA carried out a Quantitative Microbial Health Risk Assessment (QMRA) using locally sourced data as well as microbiological water quality information from dairy factories in New Zealand to provide breadth to the risk assessment process. Sampling of milk processing wastewaters was taken in December 2018 until February 2019 at several places along the treatment process, and spray irrigated wastewater was collected from a pivot irrigator which is the current method of Factory wastewater disposal. Wastewater sampling was done to determine the occurrence and levels of pathogens and their bacterial indicators in the treatment system and to identify any further deterioration of microbial quality of the wastewater during conveyance in irrigation pipelines. NIWA has interpreted the results of the assessment in terms of potential public health risk to people engaging in recreation involving direct or indirect contact with water.
- 46 A “first pass” screening-level Quantitative Microbial Risk Assessment (SQMRA) was undertaken using three pathogenic species (*Campylobacter*, *Staphylococcus aureus* and *Listeria*) detected in the Factory wastewaters. This was done to determine whether any of the species has the potential to create an increased health risk to coastal and foreshore users. The findings of that assessment are:
- *Listeria spp* were present at concentrations below the critical ingestion threshold of 0.8 cells (1D₁).
 - The risk of receiving an infective dose of *Campylobacter* from ingestion or inhalation for adults is negligible. A slight risk may exist for children but the approach taken using SQMRA was very precautionary. Results indicate that neither *Campylobacter* nor *Listeria* were likely to cause human health risk; and
 - Health risk from skin lesions arising from direct contact or exposure to aerosols is not predicted for *Staphylococcus aureus*.
- 47 Ms Rebeca Stott (NIWA) further notes that the conclusions reached in her evidence are conservative, both through the SQMRA inputs and also due to the further treatment of wastewater, particularly by UV dosing, that will occur before wastewater is discharged. Generally, there is agreement between Ms Stott and the ECAN experts, however I note that Ms Stott recommends the conditions monitor *Staphylococcus aureus* rather than *Pseudomonas aeruginosa*, as the latter was not detected in the Factory wastewater by NIWA’s sampling.
- 48 Accepting the comprehensive consent conditions proposed, the NIWA Report concludes that the potential health risk associated with the discharge of factory wastewater via the marine outfall is less than minor.

Effects (operational) on ecosystems

49 On behalf of ODL, an assessment of the potential effects on ecosystems of the operation of the wastewater pipeline and ocean outfall is set out in the following reports and evidence in chief:

- Technical Report 4: Assessment of Ecological Effects Report, by Annabelle Coates.
- Technical Report 5: Assessment of Effects on Marine Mammals Report, by Helen McConnell
- Technical Report 6: Herpetofauna Assessment Report, by Dylan van Winkel
- Technical Report 8: Coastal Bird Assessment Report, by Graham Don
- Evidence in chief of Ms Coates.

50 Adopting the advice of the experts listed above, I consider that overall the operational effects of the proposal on ecosystems to be less than minor for the reasons set out below, and due to the predicated high quality of the wastewater discharge, the high dispersive nature of the coastal environment and the mitigation proposed as part of the proposed conditions:

- *Marine mammals:* Ms Coates advises that other than potential minor displacement of marine mammals from the mixing zone, she does not consider there to be any other effects on marine mammals from the wastewater discharge due to their highly mobile nature and the vast majority of their habitat remaining unaffected⁴. On behalf of ECAN, Dr Childerhouse states that potential effects have been identified and well covered in Technical Report 5⁵. Dr Childerhouse notes that there is no specific mitigation proposed for marine mammals which is appropriate given the negligible risks posed by the activity⁶.
- *Benthic community:* Ms Coates advises that there is potential for minor changes in benthic community structure due to wastewater discharge, however, the environment is highly dynamic and species present are capable of persisting in this environment. Changes in community composition are not expected to be directly attributable to the wastewater discharge, rather result from natural phenomena⁷. On behalf of ECAN, Dr Bolton-Ritchie agrees that any effects will be limited to those which result from direct exposure to the wastewater stream, however, this is likely to be minimal due to the wastewater plume rising from the diffusers⁸.
- *Birds:* Ms Coates advises that the overall effects on birds are negligible as a very small area is affected amongst a vast area of unaffected habitat⁹. Birds that use the area are highly mobile. On behalf of ECAN, Dr Bull considers that based on the information provided

⁴ Table 2 in Evidence in Chief of Ms Coates.

⁵ Paragraph 182 of Part A of the section 42A Report.

⁶ Paragraph 182 of Part A of the section 42A Report.

⁷ Table 2 in Evidence in Chief of Ms Coates.

⁸ Paragraph 197 of Part A of the section 42A Report.

⁹ Table 2 in Evidence in Chief of Ms Coates.

by the applicant to date, he has no concerns pertaining to the effects on coastal avifauna associated with this proposal¹⁰.

- *Commercial and recreational fishing:* Ms Coates advises that overall effects on commercial and recreational fishing is negligible, as the project area does not represent significant commercial resource¹¹. Recreational fishing would need to occur directly over the diffusers to notice any change. She considers that fish stocks will not be affected.
- *Freshwater:* Ms Coates advises notes that the closest freshwater habitat is approximately 7.8km to the south of the project area, and wastewater discharge is expected to be fully dispersed within 50m of the diffusers.

Effects on recreational activities

51 An assessment of the potential effects of the proposed wastewater pipeline and the ocean outfall on recreational activities is set out in Technical Report 9, Recreation Effects Assessment Report, by Gob Greenway and Associates (contained in the application material). Mr Greenway notes that:

- The study area spans from Morven Beach Road to the north to the Waitaki River mouth in the south.
- The Waitaki River Mouth is a nationally significant recreational setting associated with salmon angling, jet boating and trout fishing. These activities are confined to the immediate mouth of the Waitaki River and the Waitaki River boating ramps at the State Highway Bridge.
- The remainder of the area is of local recreation significance, with a focus at Morven Beach Road.

52 The assessment of effects of the proposal on recreational activities is discussed in Section 7.8 of the AEE and pages 52 and 53 of Part A of section 42A Report. Adopting the advice of Mr Greenway, I agree with Ms Walker that the effects of the proposal on recreational activities will be less than minor for the following reasons:

- *Health effects resulting from direct exposure to contaminants and pathogens in wastewater discharge via windborne sea spray or direct contact and from consumption of fish which have been exposed to contaminants and pathogens in the wastewater discharge:* Mr Green way advises that based on the findings of the NIWA Report, there is very little

¹⁰ Paragraph 183 of Part A of the section 42A Report.

¹¹ Tabel 2 in Evidence in Chief of Ms Coates.

potential for people to come into direct contact with wastewater considering the absence of water-contact recreation in the affected area, and the absence of shellfish gathering.

- *Effects of discharge on the availability of fish species targeted for recreation:* Mr Greenway advises that the Ecological Effects Report concludes that the quality of the wastewater discharge has very little potential to have an effect on the habitat of fish species along the local coastline, largely due to the quality of the wastewater discharge, the natural sparseness of habitat and the natural mobility of fish species. The area in the proximity of the marine outfall is considered to be of “low” ecological value for fish, which is reflected in the low level of angler interest in the area. Mr Greenway’s assessment is that there is no potential for effects on any freshwater settings, including the popular Waitaki River mouth fishery.
- Mr Greenway states that a potential adverse effect from the operation of the pipeline is the entanglement of fishing gear, which is highly unlikely considering poor access and rare use of the setting by anglers. ODL supports an advice note referring to the need for a pipeline marker beacon to indicate the presence of pipeline to mariners.
- Noting that the pipeline is to be placed underground in the road reserve, Mr Greenway considers that there will be no effect on public access onshore.
- Closure of any part of the construction footprint on the beach on is unlikely to have any significant adverse effects noting the temporary nature of the activity and the low level of use of the setting and numerous proximate alternative beach access sites.

Effects associated with coastal hazards and coastal processes

- 53 The proposed pipeline infrastructure is located within Hazard Zones 1 and 2 identified in the RCEP. Hazard Zones 1 and 2 are based on coastal erosion rates and predictions for the next 50 to 100 years. The effects of locating the proposed pipeline infrastructure within the coastal Hazard Zones and the effects associated with coastal processes is discussed in Section 7.9 of AEE and pages 45 to 50 of Part A of the section 42A Report. An assessment of the coastal hazards and processes on the proposed pipeline infrastructure is set out in Technical Report 7, Coastal Hazards Assessment Report, by Mr Coutinho (contained in the application material). This matter is also addressed in Mr Coutinho’s evidence in chief on behalf of ODL. Mr Coutinho’s findings were peer reviewed by Mr Bruce Gabites (CRC Senior Scientist) on behalf of ECAN.
- 54 Based on the advice provided by Mr Coutinho and Mr Gabites, I agree with Ms Walker that the overall effects of associated with locating the proposed pipeline infrastructure within the coastal Hazard Zones 1 and 2 and the effects associated with coastal processes to be minor for the following reasons:

- Mr Coutinho advises that the proposed pipeline construction methodology and alignment are not expected to cause changes to the natural physical processes occurring in the coastline, and therefore, it is unlikely that the proposed marine outfall will affect coastal hazard risks on the coasts.
- Mr Coutinho advises that the proposed pipeline alignment allows for 320m of cliff retreat and 250m of beach retreat, while the predicted coastal retreat for the site over the next 100 years, which includes sea level rise and climate change, is 130m. Therefore, it is very unlikely that the pipeline will be exposed due to natural coastal erosion in the next 100 years, even considering increased erosion rates due to climate change and sea level rise.
- The proposed marine outfall does not include any permanent structures on the coast or in the active beach system. The pipeline is to be located below ground at the coast and below sea level at the near shore. As such, Mr Coutinho advises that there are no expected short-term or long-term changes to longshore drift or to natural coastal processes caused by the proposed outfall.
- Mr Gabites considers that the pipeline has been designed and will likely be constructed using a method that will ensure that it will be buried to a sufficient depth below the existing beach where it will have a minimal impact on the beach during construction, and minimal ongoing impact on the coastal processes within the surf zone and active beach system when completed¹².
- Mr Gabites states that the pipeline will not lead to any increase in the susceptibility of the surrounding area to coastal inundation¹³.

Effects on cultural values

55 The applicant recognises the historical relationship that Ngāi Tahu has with the South Canterbury area. Chapter 4 (Provision for Ngāi Tahu and their relationship with resources) of the CRPS provides for Ngāi Tahu and their relationship with resources by setting out the tools and processes that the Canterbury Regional Council will use to engage with Ngāi Tahu as tāngata whenua in the management of natural and physical resources. Section 3.4.7 of the CRPS states that the Canterbury Regional Council should seek a cultural impact assessment or cultural value assessment as part of an assessment of environmental effects under Schedule 4 of the RMA, where an activity is likely to impact on a significant resource management issue for Ngāi Tahu.

56 The applicant has always been committed to undertaking meaningful consultation with Ngāi Tahu, beginning from the initial stages of the planning this project. Te Runanga O Waihao, is the kaitiaki runanga for this area. The consultation to date with Te Rūnanga O Waihao is set out in Appendix 5. At the meeting on 12 November 2018, ODL presented the proposal at a hui

¹² Paragraph 214 of Part A of the section 42A Report.

¹³ Paragraph 227 of Part A of the section 42A Report.

at Waihao Marae, with Te Rūnanga O Waihao and Aukaha Limited (a consultant nominated by Te Rūnanga O Waihao) in attendance. It was agreed that Aukaha is to be engaged to prepare a Cultural Values Assessment to inform the design and planning of the proposal.

57 ODL held another hui with representatives from Te Rūnanga O Waihao on 26 September 2019. This hui was attended by ODL and their consultants to discuss the proposal and respond to any concern/questions from Te Rūnanga O Waihao. The matters discussed in this hui included the proposed construction methodology, potential ecological effects, potential effects on marine mammals and effects on water quality and coastal processes.

58 Appendix 5 shows that despite ODL's numerous attempts, it was not successful in organising a subsequent meeting with Te Rūnanga O Waihao. Given the delays in the preparation of the Cultural Values Assessment, ECAN agreed to notify the application without the Cultural Values Assessment Report. Having considered the submissions on cultural values, ODL again requested meetings with Te Rūnanga O Waihao and Te Rūnanga O Arowhenua and their consultants to discuss the concerns raised in the submissions and possible mitigation measures to address those concerns. On 21 May 2020, on behalf of Te Rūnanga O Waihao, Ms Guise advised Babbage that the present focus of Te Rūnanga O Waihao is to prepare their evidence for the hearing, and given their current understanding of the proposal, she considers that the hearing process is the only realistic forum within which to discuss their full range of issues. ODL would have liked the opportunity to discuss these matters prior to the hearing process, however notes that this has not been possible.

59 In relation to the submissions on cultural values, the submitters had a variety of concerns, including:

- Te Rūnanga O Waihao considers that there are three main activities which may adversely impact mana whenua values: the discharge of wastewater to the ocean; the construction of the pipeline through indigenous skink habitat on the shore; and construction, associated disturbance and the occupation of the pipeline offshore.
- The information included in the application material is insufficient to fully understand the adverse effects on the environment.
- Consideration of alternatives should be more detailed and robust.
- Discharge of contaminants to water is highly offensive and can cause ill cultural health, therefore, an alternative discharge location to land is preferred.
- Potential to create poor water quality.
- Effects of discharge on the wider ecosystem and the environment.
- Effects on Wainono Lagoon, which is part of the Waihao Mātaimai area.
- Potential effects on taonga species, marine life, ocean biodiversity and Hector's Dolphins.
- Effects on fish species within the proposed Marine Protection Area.

- Adverse effects on the indigenous lizards and skinks.
- Cumulative effects of having multiple outfall structures.

60 The application material includes the Cultural Impact Assessment Report (CIA), prepared by Aukaha on behalf of Te Rūnanga O Waihao. The CIA states that Te Rūnanga O Waihao believes that there is insufficient information to make a definite assessment of the effects on cultural values. Section 5 of the CIA identifies the cultural values impacted by the proposal, the reasons and recommendations both for the construction phase and the wastewater discharge.

61 Having considered the submissions, and the CIA, the following matters have been incorporated into the proposal to avoid, remedy or mitigate the effects of the proposal on cultural values:

- ODL acknowledges that although land based disposal method was assessed to be the preferred option, it was considered not be practical or viable due to the unavailability of suitable land areas, the capital cost, the complexity of integrating disposal with farming operations, lack of flush water and the wet weather events. A comprehensive assessment of alternatives concluded that the wastewater discharge to the coastal environment as proposed is the most appropriate method.
- A precautionary approach has been incorporated into the proposal. The use of a conservative hydrodynamic model was created with international wind and wave datasets and calibrated with field data measurements. The model shows that the worst-case scenario for dilution of the wastewater plume is during calm conditions when dilutions at the edge of the mixing zone (50 metres from the diffusers) is at least 300-fold. Under more common conditions (80% of the time) more energetic wind and wave conditions increase dilutions at the edge of the mixing zone to at least 500-fold.
- The proposed condition of consent limits the discharge of wastewater to milk processing plant condensate water, tanker clean in place washwater, tanker hoop washwater and factory washwater (i.e. it does not include Factory domestic wastewater, nor stormwater).
- The proposed condition of consent requires monitoring of wastewater at the end of the plant prior to discharge to the outfall pipeline.
- The proposed condition of consent requires compliance with specified parameters to ensure high quality treatment of the wastewater before discharge.
- The proposed condition of consent requiring monitoring of indicator bacteria and pathogens prior to discharge to ensure no adverse effects on human health.
- The proposed condition of consent requiring benthic monitoring surveys to determine the infauna / epifauna species composition and abundance.
- The proposed condition of consent requiring monitoring of seabed sediment for specified parameters.

- The proposed condition of consent requiring monitoring of receiving water quality for identified parameters, including water temperature, pH, Dissolved oxygen % saturation, suspended solids, phosphorus and nitrogen.
- The proposed condition of consent requires the establishment of a Community Liaison Group, which includes representation from Te Rūnanga O Waihao. This provides opportunity for on-going discussions should any concerns arise during the construction or operation of the wastewater pipeline infrastructure.
- Preparation of a Construction Management Plan to ensure that the release of sedimentation is minimised.
- Preparation of a Lizard Management Plan in consultation with Te Rūnanga O Waihao, to ensure that any long term impacts on the habitat of each species of indigenous lizards is a positive impact.
- Requirement to comply with Accidental Discovery Protocol, developed in consultation with the Department of Conservation and Te Te Rūnanga O Waihao.
- Keep the disturbance of the seabed to a minimum necessary to carry out the required works.
- The water quality assessment completed by Mr Wilson concludes that the proposed wastewater discharge will be treated sufficiently that the effects on the receiving water quality will be less than minor.
- The NIWA report concludes that the potential health risk associated with the discharge of wastewater is negligible.
- The various specialist reports on ecosystems, concludes that overall the operational effects on the ecosystems will be less than minor, due to the predicted high quality of wastewater discharge, the high dispersive nature of the coastal environment and the mitigation proposed.
- The assessment completed by Mr Greenway confirms that the effects of the proposal on recreational activities will be less than minor.
- The assessment completed by Mr Coutinho confirms that overall effects associated with locating the proposed pipeline infrastructure within the coastal Hazard Zones 1 and 2 and the effects associated with coastal processes are anticipated to be minor.
- Mr Coutinho, Dr Wilson and Ms Coates advise that based on Dr Wilson's assessment of the current and historical water quality at the coast and expected dilution at distances of the other point sources along the coast, no detectable cumulative effects are expected on the environment (including the ecological environment).

Construction effects

62 Adopting the advice of the experts on behalf of ODL, and ECAN, I agree with Ms Walker that subject to the compliance with conditions, the overall construction effects of the proposal will be minor of the reasons set out below:

- *Terrestrial environment:* Due to construction works, the skink habitat will be temporarily removed along the grassed berms of Archibald Road where habitat may exist, and in the gully in the coastal cliffs leading to the beach. Ms Coates advises the effects on terrestrial environments will be moderate as the lizard habitats will be unavailable or altered during construction, however, this will be a temporary effect and will be unaffected once construction ceases¹⁴.
- *Marine environments – suspended sediments:* Ms Coates advises that the effects on the marine environment due to construction works resulting in increased suspended sediment will be low, as the construction works will be temporary and in an environment which is already naturally subject to high levels of suspended sediment¹⁵.
- *Marine environments – disturbance to fish, birds and marine mammals:* Ms Coates advises construction effects on fish, birds and marine mammals will be negligible. Fish, birds and marine mammals are highly mobile and able to move away from disturbed areas. Adjacent non affected habitat is plentiful and of the same nature as the project area. Fish, birds and marine animals are not reliant on the project area¹⁶. On behalf of ECAN, Dr Chiderhouse states that the construction effects on marine animals have been identified and well covered in Technical Report 5¹⁷. Dr Chiderhouse notes that no specific mitigation is proposed for marine mammals, which he considers to be appropriate given the negligible risks posed by the activity¹⁸. On behalf of ECAN, Dr Bull states that the applicant has adequately assessed the effects of construction on coastal birds and little penguins¹⁹. Dr Bull states that given the low level of effects determined through the assessment, he is of the view that further mitigation is not required and he has no further concerns pertaining to the effects on coastal avifauna associated with the proposal²⁰.
- *Marine environments – loss of benthic biota:* Ms Coates advises that the construction effects on benthic biota is negligible. She states that the community has low diversity of common species. Losses of individuals during construction will be minor in relation to the

¹⁴ Table 2 in Evidence in Chief of Ms Coates.

¹⁵ Table 2 in Evidence in Chief of Ms Coates.

¹⁶ Table 2 in Evidence in Chief of Ms Coates.

¹⁷ Paragraph 101 of Part A of the section 42A Report.

¹⁸ Paragraph 101 of Part A of the section 42A Report.

¹⁹ Paragraph 111 of Part A of the section 42A Report.

²⁰ Paragraph 111 of Part A of the section 42A Report.

wider Canterbury Bight community. Species will recolonise rapidly once the disturbance ceases.

- *Excavation works over unconfined aquifer system:* Mr Coutinho advises that the construction of the proposed pipeline is confined to a narrow area along the road reserve. Any excavation will be temporary and relatively shallow (no deeper than 3m). He states that impacts on groundwater are only expected to occur if the earthworks extend into the irrigation season. Nonetheless, any impacts are restricted to a small area where trenches would be dewatered and will be very minor since the groundwater removed would be discharged nearby and infiltrate back into the aquifer. The development of a Construction Management Plan will appropriately address potential effects on groundwater quality.

Cumulative effects

63 Several submitters have expressed concerns regarding cumulative effects of other outfall in the region. Mr Coutinho advises that:

- Other point sources along the coast for cumulative effects are the rivers that discharge nutrient rich water from the farmed catchments and other ocean outfalls. The nearest sources are the Waitaki River 7.5kms to the south, and the Waihao River (11kms) and consented Fonterra Studholme outfall (15km) to the north.
- Data extracted from the hydrodynamic model show that dilution increases exponentially with distance away from the discharge point further along the coast. Dilutions modelled for coastal locations in front of Morven Beach Rd 5 kms to the north and Fisheries Rd 7 kms to the south are mostly well over 10,000-fold.
- Non-point sources have also been considered, as they form part of the background levels. Therefore, as long as non-point sources remain discharging at similar levels to existing, the cumulative effects of this discharge on modelling have been considered.

64 Mr Coutinho concludes that based on Dr Wilson's assessment of the current and historical water quality at the coast and expected dilution at distances of the other point sources along the coast, no detectable cumulative effects are expected. Any changes in water quality at such distances and dilution levels are expected to be orders of magnitude below natural background variations. Dr Wilson states that modelling shows that the quality of the effluent and dilution at the nearest point discharge will be so high that no cumulative effects are expected to occur.

65 Ms Coates also addresses the concerns of the submitters on cumulative effects of outfalls on ecological environment in her evidence in chief. She states that there are six other consented discharges to the CMA or surface water that discharges to the coast within 70km in either direction of the proposed marine outfall:

- Alliance Pukeuri, Oamaru – discharge treated wastewater from meat processing facility discharged via water race to surface water very close to the coast.
- Waitaki District Council, Oamaru – discharge treated municipal wastewater to surface water then to sea.
- Silver Fern Farms, Pareora – discharge up to 12,000m³ per day treated meatworks processing effluent.
- Timaru District Council – discharge up to 40,000m³ per day of treated municipal wastewater.
- Fonterra, Clandeboye – discharge up to 34,300m³ per day of treated dairy factory wastewater
- Fonterra, Studholme – discharge treated dairy factory wastewater (yet to be constructed)

66 Ms Coates states that There is no evidence that these discharges are having adverse effects on the water quality or aquatic ecology of the wider environment. Monitoring of discharges has found either no effect, or very minor localised changes. Wider scale changes in benthic community have been attributed to wider scale environmental patterns and natural disturbances.

67 Ms Coates does not consider it likely that the proposed wastewater discharge will result in cumulative effects on the ecological environment, when combined with the effects of other discharges in the area. The coastal environment is highly dynamic and the discharge will be well mixed within 50m of the diffusers under all weather conditions. Outside of the mixing zone, the discharge will be barely detectable, and will be completely undetectable at the location of the nearest adjacent discharges.

Positive effects

68 ODL makes significant economic and social benefit to the Otago and Canterbury Regions and beyond. Mr Lodge confirms that Yili has invested in excess of \$476 million on the Factory site.

69 The positive effects of the proposal include:

- The approval of this application will ensure that the expansion of the processing capacity of the Factory site as planned under Stage 3 is enabled.
- A significant contribution to the local community activities, via Oceania's role as a responsible employer and "good corporate citizen".
- Increasing and retaining economic activity and production in Glenavy, Morven, Waimate, Timaru.
- Flow on regional economic benefits.

- Providing job opportunities for Glenavy, Morven, Waimate, Timaru and surrounding residents.

SECTION 104(1) – NEW ZEALAND COASTAL POLICY STATEMENT 2010

70 Under section 104(1)(b)(iv), when considering an application for resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to the relevant provisions of the New Zealand Coastal Policy Statement 2010 (NZCPS). The purpose of the NZCPS is to state the policies in order to achieve the purpose of the RMA in relation to the coastal environment of New Zealand.

71 Ms Walker has completed an assessment of the proposal against the NZCPS. I agree with her assessment, except in regards to her comments in relation to Objective 1. She is of the view that post construction, the expected quality of the discharge after treatment will be adequate with the exception of dissolved reactive phosphorous and dissolved nitrogen, and therefore, the proposal is only partially consistent with Objective 1²¹. Adopting the advice of Dr Wilson, I disagree with this assessment. My comments in regards to Objective 1 are set out below. In the memo dated 12 May 2020, the Hearings Panel had requested an assessment of the proposal in relation to Policies 13 and 23 of the NZCPS. My assessment of these policies is set out below.

Management of discharges

72 This application seeks to discharge treated wastewater into the Pacific Ocean following the construction of the pipeline and marine outfall infrastructure. As such the proposal is required to have “particular regard” to Policy 23(1) of the NZCPS, which relates to discharge of contaminants.

73 *Objective 1 of the NZCPS:*

To safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land, by:

- *Maintaining or enhancing natural biological and physical processes in the coastal environment and recognising their dynamic, complex and interdependent nature;*
- *Protecting representative or significant natural ecosystems and site of biological importance and maintaining the diversity of New Zealand’s indigenous coastal flora and fauna; and*

²¹ Paragraph 321 of Part A of the section 42A Report.

- *Maintaining coastal water quality, and enhancing it where it is deteriorated from what would otherwise be its natural condition, with significant adverse effects on ecology and habitat, because of discharges associated with human activity.*

74 With respect to coastal water quality, Objective 1 seeks to safeguard the integrity, form, functioning and resilience of the coastal environment, and to sustain its ecosystems, by maintaining coastal water quality and enhancing this where it has deteriorated. In this regard, Policy 23(1) of the NZCPS is the key relevant policy for assessment, as it provides directions on the management of the discharge of contaminants to water in the coastal environment. In addition, Policies 21 (enhancement of water quality) and Policy 22 (sedimentation) are also relevant. Giving effect to Policies 22 and 23 will help maintain or enhance coastal water quality as sought under Objective 1.

75 *Policy 23(1) of the NZCPS:*

In managing discharges to water in the coastal environment, have particular regard to:

- (a) *The sensitivity of the receiving environment;*
- (b) *The nature of the contaminant to be discharged, the particular concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if the concentration of contamination is exceeded; and*
- (c) *The capacity of the receiving environment to assimilate the contaminants; and*
- (d) *Avoid significant adverse effects on ecosystems and habitats after reasonable mixing;*
- (e) *Use the smallest mixing zone necessary to achieve the required water quality in the receiving environment; and*
- (f) *Minimise adverse effects on the life-supporting capacity of water within the mixing zone.*

76 I consider Policy 23(1) to be an enabling policy, in that it sets out a framework or parameters within which discharges to water in the coastal environment is to be “managed”. The technical reports supporting this application illustrate that ODL has had particular regard to matters (a) to (f) in preparing the application, these parameters have determined the level of treatment of the wastewater to be discharged, the size of the mixing zone and the outfall design.

77 With respect to Policy 23(1)(e), I note that Policy 23 wording does not specify as to what is deemed to be the “smallest mixing zone”, though I note that this is qualified by “necessary to achieve the required water quality in the receiving environment”. In this respect, I consider Policy 7.1 of the RCEP to be relevant as it provides guidance on what is deemed to be a “reasonable mixing zone”. A regional plan is required to “give effect” to the NZCPS, and as such, “giving effect” to Policy 7.1 would be “giving effect” to the NZCPS.

78 RCEP identifies the classes of coastal waters and minimum standards for water quality for specified areas of coastal waters within the Canterbury Region. However, there are areas where water quality classes for parts of the CMA have not been established in the RCEP. The proposed marine outfall is located within the CMA area where RCEP has not established water quality classes. In this regard Policy 7.1 is relevant:

Policy 7.1 of the RCEP

In areas where water quality classes for parts of the Coastal Marine Area have not been established, the granting of the resource consent to discharge a contaminant or water into water, or onto or into land in the Coastal Marine Area:

- a. shall not unreasonably restrict existing lawful uses of the coastal waters; and*
- b. shall provide that, after reasonable mixing, the discharges shall not have any more than minor adverse effect on the quality of the water existing prior to the granting of the resource consent.”*

79 With regard to “reasonable mixing zone”, Policy 7.6 of the RCEP states the following, which identifies the matters which are relevant when establishing mixing zones on a case-by-case basis:

Policy 7.6 of the RCEP

In setting conditions on a resource consent to discharge a contaminant or water into water, or onto or into land in the Coastal Marine Area, a reasonable mixing zone shall be determined by considering amongst other matter, the following:

- a. the volumes, contaminant loading and contaminant concentrations involved with the discharge;*
- b. factors such as sea conditions, tides, wave action, water depths, water velocity, and flushing characteristics that will normally affect the assimilate, capacity of the receiving water and the dispersion of the contaminants or the discharge of water;*
- c. the presence of Area of Significant Natural Value at the site or in close proximity;*
- d. the existing use of the immediate area, including the presence of other discharges;*
- e. if in any area within which a water quality standard is set, the size of the area in relation to the mixing zone; and*
- f. the proximity of adjacent areas where water quality standards have been set; and*
- g. the natural values of the receiving environment.*

80 In Technical Report 1, Water Quality Assessment Report, Dr Wilson sets out the methodology for determining the ambient water quality of the coastal waters in the part of the CMA within which the proposed marine outfall is to be located. Based on the proposed method of wastewater treatment, Dr Wilson derived water quality parameters for the treated wastewater, which are to be included in the conditions of consent. In Technical Report 3, Dispersion

Modelling Report, e-Coast uses information on the physical oceanography of the site and utilises a calibrated numerical model to determine the “reasonable mixing zone” so that the offshore location and outfall arrangement achieve satisfactory dilution and dispersion of the treated wastewater. The “reasonable mixing zone” was determined to be the area within 10m to 50m of the of the physical footprint of the diffuser. On behalf of ECAN, Dr Bolton-Ritchie agrees that the proposed 50m mixing zone around each diffuser is acceptable. Dr Wilson advises that based on the “reasonable mixing zone” (as determined by the Dispersion Modelling Report), the adverse effects of wastewater discharge on the quality of the receiving environment will be less than minor. Accordingly, I consider that the proposal complies with Objective 1 and Policy 23(1) of the NZCPS.

- 81 With respect to Policy 22(2) of the NZCPS requires that “*subdivision, use or development will not result in significant increase in sedimentation in the coastal marine area, or other coastal waters*”. I agree with Ms Walker that the proposed mitigation during the construction stage will minimise the sediments to be discharged into the CMA and will not result in “significant increase” in sedimentation²².

Preservation of the natural character of the coastal environment

- 82 Policy 13 of the RCPS seeks to preserve the natural character of the coastal environment and protect it from inappropriate subdivision, use and development. Policy 13(1)(a) seeks to “avoid adverse effects on activities on natural character in areas of the coastal environment with outstanding natural character”. In the case of this application, the proposal site is not classified as Outstanding Natural Landscape or Natural Feature. As such, Policy 13(1)(b) is relevant as it seeks to “avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment”. Policy 13(2) recognises that natural character is not the same as natural features and landscapes or amenity values and may include a range of matters. The application material is supported by a range of detailed technical reports which has considered the effects of the proposal on various elements that can be considered to be part of the “natural” environment (including natural movement of water, ecological elements, landforms, sediments, and natural elements). The assessment of effects under section 104(1)(a) has determined that there are no significant adverse effects on the natural character of the coastal environment arising from the proposal. Additionally, I do not consider the proposed development to be “inappropriate” in the context of Policy 13 wording. I consider the proposed development to be “appropriate” as there are sound resource management reasons for the application, informed by a range of specialist input.

²² Paragraph 350 of Part A of the section 42A Report.

SECTION 104(1) – CANTERBURY REGIONAL POLICY STATEMENT

83 Under section 104(1)(b)(v), when considering an application for resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to the relevant provisions of the Canterbury Regional Policy Statement. In the memo dated 12 May 2020, the Hearings Panel has asked the question as to how the proposal restores or enhances cultural values in accordance with Objective 8.2.4 of the CRPS. My comments are set out below.

84 *Objective 8.2.4 of CRPS*

In relation to the coastal environment:

1. *Its natural character is preserved and protected from inappropriate subdivision, use and development; and*
2. *Its natural, ecological, cultural, amenity, recreational and historic heritage values are restored or enhanced.*

85 Objective 8.2.4(2) is a very broad objective. With respect to cultural values, it seeks to ensure that cultural values in the coastal environment are restored or enhanced. The focus here is on the use of the terms “restored” or “enhanced”. The use of the connecting word “or” here, gives the option of either exercising the “restore” option or the “enhancement” option. These terms are not defined in the CRPS. The plain dictionary meaning of the term “restore” is to bring it back to its former state. The plain dictionary meaning of the term “enhance” is to improve the quality of something.

86 The explanatory text for Objective 8.2.4 provides guidance as to what is intended by the use of the terms “restore or enhance” in the context of this objective. It states

...Adverse effects of past activities have, in places, degraded the coastal environment. In these places, enhancement to restore the coastal environment may be appropriate. Elsewhere, maintenance of the quality of the existing coastal environment may be more appropriate... (underlined for emphasis).

87 In the context of the above explanatory text, my interpretation of Objective 8.2.4(2) is that it seeks to ensure that cultural values in the coastal environment are restored, i.e. the values are re-instated to a similar level to what it was prior to the proposed activity being undertaken. Alternatively, if the activity is proposed in a degraded coastal environment, then there is the option to enhance the cultural values, i.e. the values are restored to levels prior to degradation.

88 In the case of this application, it is generally accepted that the area within the proximity of the proposed marine outfall is not a degraded coastal environment. Having regard to the explanation above, and noting the natural state of the environment, in this context, it would be

appropriate to interpret Objective 8.2.4(2) to mean it seeks to ensure that cultural values in the coastal environment are restored (i.e. the values are re-instated to a similar level to what was prior to the implementation of the proposal).

89 I consider tangata whenua to be best placed to determine whether the construction and implementation of the proposal will ensure that the cultural values are restored in the coastal environment. Purely from a scientific point of view, I consider that the application seeks to ensure that the coastal environment is restored to similar levels to what it was prior to the implementation by:

- taking a precautionary approach by using a conservative hydrodynamic model for modelling of dilution levels of the wastewater discharge.
- ensuring that the proposed wastewater discharge is treated to specified parameters so that the effects on the receiving coastal water quality is less than minor.
- ensuring that the wastewater discharge does not include Factory domestic wastewater nor stormwater.
- requiring monitoring of the quality of the treated wastewater at the end of the wastewater treatment plant prior to discharge to the outfall pipeline.
- requiring benthic monitoring surveys to determine infauna / epifauna species composition and abundance in the coastal environment.
- requiring monitoring of indicator bacteria and pathogens in the treated wastewater prior to discharge.
- requiring the establishment of a Community Liaison Group, which includes representation from Te Rūnanga O Waihao. This provides opportunity for on-going discussions should any concerns arise during the construction or operation of the wastewater pipeline infrastructure.
- requiring the preparation of Construction Management Plans to ensure the adverse effects during the construction phase are appropriately managed, noting the temporary nature of these activities.
- Requiring the preparation of a Lizard Management Plan in consultation with Te Rūnanga O Waihao, to ensure that any long term impacts on the habitat of each species of indigenous lizards is a positive impact.
- requirement to comply with Accidental Discovery Protocol, developed in consultation with the Department of Conservation and Te Te Rūnanga O Waihao.
- Supporting the application with rigorous assessment from relevant specialists to confirm the anticipated adverse effects of the proposal on the receiving coastal environment.
- Supporting the application with assessment from relevant specialists confirming that the proposal will not result in significant cumulative effects on the receiving environment.

SECTION 104(1) – REGIONAL COASTAL ENVIRONMENT PLAN

90 Under section 104(1)(b)(vi), when considering an application for resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to the relevant provisions of the RCEP. In addition to Ms Walker’s assessment of the proposal in relation to the RCEP provisions in Part A of section 42A report, an evaluation is also contained in Section 9.6 of the AEE.

91 In the memo dated 12 May 2020, the Hearings Panel requested further details on the recognition in the RCEP that industrial discharges are causing localised reduction in water quality as a resource management issue. My comments are set out below.

92 The RCEP identifies issues, and contains objectives, policies and rule framework to guide the appropriate use of the coastal environment in the Canterbury Region. The identification of an “issue” is the starting point to inform the appropriate resource management response to address that issue. In this regard, Chapter 5 of the RCEP contains a “Summary of Significant Resource Management Issues for the Region’s Coast”. With respect to Coastal Water Quality, the following resource management issue is identified:

Point and non-point source discharges of contaminants directly or indirectly into the waters of the Coastal Marine Area can adversely affect water quality and thereby:

- a. their ecological value;*
- b. the cultural relationship Tāngata whenua have with water; and*
- c. their present and future use by, and value to, the Canterbury community.*

93 Having identified the above issue, Chapter 7 sets out the provisions relating to coastal water quality. RCEP recognises that point and non-point source discharges directly or indirectly into the waters of the CMA can adversely affect water quality. As such, Objective 7.1 seeks to enable present and future generations to gain cultural, social, recreational, economic, health and other benefits from the quality of the water in the CMA, while maintaining and / preserving a number of matters, including maintaining the existing natural quality of coastal waters, safeguarding the life-supporting capacity of the water, protecting wahi tapu and Wāhi Taonga of value to Tāngata whenua, preserving natural character, and recognising the intrinsic values of ecosystems.

94 Policy 7.1 of the RCEP implements Objective 7.1. Policy 7.1 (set out in paragraph 78) seeks to ensure that the quality of the coastal environment that is presently largely non-degraded is maintained. Under Policy 7.1(b), it is recognised that a reasonable mixing zone will need to be applied to ensure that after reasonable mixing, the discharge will not have any more than minor adverse effect on the quality of the water existing prior to the granting of the resource consent.

Policy 7.6 identifies the matters that are relevant when establishing a mixing zone on a case-by-case basis.

95 In paragraph 80, I explain the methodology followed by the applicant to determine the “reasonable mixing zone” to ensure that the proposal meets Policy 7.1(b) so that the discharge will not have any more than minor adverse effects on the quality of the receiving waters.

96 From a cascade approach point of view, in relation to the matter of point discharges, I consider that the applicant has illustrated that the proposal complies with Policy 7.1(b), thereby Objective 7.1 has been achieved, and thereby collectively, the resource management issue set out in Chapter 5 has been acknowledged and addressed.

SECTION 105(1) OF THE RMA

97 Section 105(1) of the RMA states that for a resource consent application for a discharge permit or coastal permit that would contravene section 15 or section 15B, the consent authority must, in addition to section 104(1), have regard to:

- a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
- b) the applicant’s reasons for the proposed choice; and
- c) any possible alternative methods of discharge, including discharge into any other receiving environment.

98 With respect to 105(1)(a), the specialist reports supporting this application have considered the nature of the discharge and the sensitivity of the receiving environment, and conclude that the adverse effects on the receiving environment will be less than minor, and that the coastal environment can easily accommodate the discharge through dilution.

99 Many submitters have suggested that alternatives need to be considered before discharge to CMA, such as discharge to land.

100 With respect to section 105(1)(b), the reasons for the wastewater discharge into the Pacific Ocean are set out in detail in section 8 of the AEE and Mr Duder’s evidence in chief. Essentially there are three primary factors, which have determined the applicant’s choice of discharge:

- It provides a year – round, long-term, acceptable and sustainable solution to the management of factory wastewater from the Factory.
- It avoids effects associated with land-based discharge in relation to nutrient enrichment of groundwater.

- It is an investment in the Factory, which the applicant is willing to make, having regard to the need for dairy processing facilities to provide long term, sustainable solutions for milk supply in the region.

101 With respect to section 105(1)(c), a comprehensive assessment of alternative options was completed by ODL. Mr Duder states that the following alternative methods were considered:

- Discharge to land
- Discharge to fresh water
- Discharge to municipal system
- Recharge to ground water
- Evaporation
- Electrolysis
- Minimisation of wastewater

102 Mr Duder states that although land based disposal method was assessed to be the preferred option, it was considered not be practical or viable due to the unavailability of suitable land areas, the capital cost, the complexity of integrating disposal with farming operations, lack of flush water and the wet weather events. The assessment of alternatives concluded that the wastewater discharge to the coastal environment as proposed is the most appropriate method.

103 Ms Walker agrees that section 105 matters have been addressed by the applicant²³.

SECTION 107 OF THE RMA

104 Section 107 of the RMA prevents the grant of certain discharge and coastal permits where after reasonable mixing, the contaminant or water discharged, is likely to give rise to all or any of the following effects on the receiving water:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals;
- Any significant adverse effects on aquatic life.

²³ Paragraph 429 of Part A of section 42A Report.

105 Dr Wilson advised that based on the identified reasonable mixing zone, the adverse effects of wastewater discharge on the quality of the water in the receiving environment will be less than minor.

106 With respect to matters set out in section 107, based on the advice of ODL experts, I note that:

- The Factory wastewater will be subject to more than one treatment stage, and will be of a high quality. The discharge of significant floatable materials will not occur during normal operation.
- It is highly unlikely that the discharge of treated wastewater from the marine outfall would cause any emission of objectionable odour.
- Any change in colour or visual clarity will not be significant.
- The Ecological Assessment Report concludes that there are no significant adverse effects on aquatic life.

107 Ms Walker agrees that the applicant has assessed the proposal against section 107 of the RMA²⁴. She has not raised any concerns in regards to that assessment.

CONDITIONS

108 Part A and B of the section 42A report includes Ms Kelly's recommended conditions of consent. The recommended conditions are packaged together for a number of resource consent numbers, as set out in Table 2 below.

109 The applicant has reviewed these recommended conditions and is generally supportive of it. In response to the submissions, the applicant proposes some amendments to the recommended conditions. Appendix 6 of my evidence contains a track changes version showing the changes proposed by ODL to Ms Kelly's recommended conditions. Comments are included in the track changes version in Appendix 6 explaining the amendments proposed.

²⁴ Paragraph 432 of Part A of the section 42A Report.

Table 2: Packaging of recommended conditions in relation to resource consent numbers

Activity	Resource Consent number
Package 1	
Erection and placement of structures in the Coastal Hazard Zones	CRC201188
Package 2	
Disturbance of CMA and removal of material from the CMA	CRC201190
Erection of structure in the CMA	
Erection or placement of structure in the CMA	
Permanent occupation of the CMA	
Deposition of material on the foreshore / CMA	
Package 3	
Discharge of water and contaminants to the CMA	CRC201194
Package 4	
Earthworks over unconfined or semi-confined aquifer	CRC201187
Take of groundwater for dewatering during construction	CRC201191
Discharge of dewatering water to land or water	CRC201192

111 Package 1 (resource consent number CRC201188 - erection and placement of structures in the Coastal Hazard Zones) contains the following key conditions:

- Duration period of 10 years.
- Condition 2: Limitations on the placement of structures.
- Conditions 6 and 7: requirement to prepare a Construction Management Plan (CMP) prior to works and the matters to be included in the CMP.
- Conditions 10 and 11: requirement to prepare a Lizard Management Plan and the matters to be addressed in it.
- Conditions 13 and 14: requirement to prepare an Erosion and Sediment Control Plan and the matters to be included in it.
- Condition 16: requirement to check for penguin presence in the gully during works.
- Condition 20: requirement to follow archaeological discovery protocols.

112 Package 2 (resource consent number CRC201190 – works and structures within the CMA and) contains the following key conditions:

- Duration period of 35 years.
- Condition 2: Limitations on the placement of structures
- Conditions 6 and 7: requirement to prepare a Construction Management Plan (CMP) prior to works and the matters to be included in the CMP, including accidental discovery protocol.
- Conditions 10: requirement for a water quality monitoring plan during works.
- Condition 11: requirement for site remediation following completion of works.
- Condition 12: requirement to erect beach signage and include map references in marine charts of the position of the marine outfall pipeline and the diffusers.
- Conditions 13 and 14: certification requirements.
- Conditions 15 to 18: requirements for the inspection and maintenance of the outfall pipeline and diffusers.

113 Package 3 (resource consent number CRC201194 – discharge of wastewater) contains the following key conditions:

- Duration period of 35 years.
- Condition 1: limits wastewater discharge to milk processing waters (including milk processing plant condensate, tanker clean in place washwater, tanker hoop washwater and factory washwater).
- Condition 2: specifies the method of discharge as outfall pipeline and three diffusers, and location of the diffusers.
- Condition 3: requirement to illustrate that the final outfall design will achieve the specified minimum dilution.
- Condition 4: specification of the minimum methods of wastewater treatment.
- Conditions 5 to 9: requirements to prepare a Wastewater Treatment Plant Management Plan.
- Condition 10: specified maximum volume of discharge.
- Conditions 12 to 15: requirements for wastewater monitoring.
- Condition 16 to 21: requirements for monitoring of indicator bacteria and pathogens.
- Condition 22 and 23: requirements for benthic monitoring.
- Conditions 24 and 25: requirements for monitoring of receiving environment water quality.
- Condition 29: requirements for annual environment report.
- Condition 30: requirement to maintain a complaints register.
- Condition 32: requirement to establish a Community Liaison Group.

114 Package 4 (resource consent number CRC201187, CRC201191 and CRC201192 – earthwork, water take and discharge of dewatering water) contains the following key conditions:

- Duration period of 10 years.
- Condition 2: requirement for settling tanks for removal of sediment prior to discharge.
- Condition 3: conditions on discharge to irrigation channels.
- Condition 5: requirement to maintain a complaints register.

CONCLUSION

115 For the reasons set out in my evidence, I consider that the proposed wastewater pipeline and marine outfall is an appropriate and efficient use in the CMA, and the application material is aligned with and gives effect to the relevant objectives and policies of the statutory planning documents, including the New Zealand Coastal Policy Statement.



Sukhi Singh

28 May 2020