

**BEFORE COMMISSIONERS APPOINTED BY THE NELSON CITY COUNCIL**

---

IN THE MATTER OF                      Applications for resource consent under the  
Resource Management Act 1991

AND IN THE MATTER OF              The aberrational discharge of sewerage from  
Nelson Sewerage Business Unit (NSRBU) pump  
stations and reticulation network

---

**STATEMENT OF EVIDENCE OF JEREMY BUTLER**

Dated 24 November 2017

---

## **1. INTRODUCTION**

- 1.1 My name is Jeremy Zachariah Butler. I am employed as a resource management planning consultant by the Nelson-based firm, Landmark Lile Ltd. The practice is involved throughout the top of the south and beyond providing specialist planning and resource management services.
- 1.2 I hold a BSc (with honours) and an MSc from Otago University. Both degrees major in Geography, with particular specialisation in physical geography studies, ecology and resource management. I have practiced as a planner and resource management practitioner for approximately 13 years. I held senior and team leader positions in a number of territorial and regional authorities including most recently the Tasman District Council where I held the position of Principal Planner.
- 1.3 I am an Associate Member of the New Zealand Planning Institute. I am also a certified Commissioner with a chairing accreditation from the Ministry for the Environment. I have been engaged as a commissioner (including sole commissioner) on a number of occasions with six of those engagements proceeding to a hearing.
- 1.4 I have read the Code of Conduct for expert witnesses issued as part of the Environment Court Practice Note. I agree to comply with the Code of Conduct. I am satisfied that the matters addressed in this statement of evidence are within my expertise. I am not aware of any material facts that have either been omitted or might alter or detract from the opinions expressed in this statement of evidence.

## **2. ENGAGEMENT AND PREPARATION**

- 2.1 Nelson Regional Sewerage Business Unit (“NRSBU”) engaged Landmark Lisle to prepare the resource consent application and to provide independent expert planning evidence in relation to this hearing.
- 2.2 I have visited the various pump station sites on several occasions. I have also been to all of the discharge points and other relevant locations such as the Monaco Peninsula contact recreation area.

- 2.3 As part of my preparation I have read the section 42A report prepared by Ms Lojkine.

### 3. OUTLINE OF EVIDENCE

- 3.1 In this statement of evidence I will:

- Section 4 – discuss the purpose and scope of the application;
- Section 5 – address the status of the activity;
- Section 6 – discuss my assessment of the role of “probability” when assessing effects;
- Section 7 – address the provisions of the New Zealand Coastal Policy Statement 2010 (NZCPS);
- Section 8 – address the provisions of the Nelson Regional Policy Statement (NRPS);
- Section 9 – address the provisions of the Nelson Resource Management Plan (NRMP);
- Section 10 – summarise the effects on the environment, particularly:
  - (a) estuarine ecology;
  - (b) amenity;
  - (c) natural character;
  - (d) human health; and
  - (e) coastal marine water quality standards.
- Section 11 – discuss any other matters and the statutory considerations;
- Section 12 – state my findings regarding Section 104D;
- Section 13 – assess the proposal against Part 2 of the Act;
- Section 14 – address the recommended conditions; and
- Section 15 – present my conclusions

- 3.2 Note that in this evidence, wherever I have utilised underlining on quoted excerpts from documents or another’s evidence, this emphasis is added by me, unless otherwise stated.

#### 4. PURPOSE AND SCOPE OF THE APPLICATION

4.1 The nature of the application and the “activity sought” is comprehensively described in the application and further information subsequently provided. I have used inverted commas in relation to the above because this activity sought is unusual in resource management: it is not an activity that the applicant is seeking to undertake in the normal course, and nor is it an activity over which the applicant holds complete control.

4.2 Ms Lojkine has provided a comprehensive timeline<sup>1</sup> of the documents provided and so I will not repeat that.

4.3 First, it is useful to establish appropriate terminology. In previous documents the discharges that may occur have been variously and inconsistently referred to as “accidental discharges”, “overflow discharges”, “emergency discharges”, or “spills”. None of these terms are entirely satisfactory to describe the discharges that can arise from the various sources. I therefore use the following terminology through this evidence:

**Accidental discharges** – these are discharges that may occur from a broken pipe or as a result of human error that causes a discharge.

**Overflow discharges** – these are discharges that occur from pump-stations due to excessive flow or insufficient pumping capacity leading to an overflow.

**Aberrational discharges** – is an appropriate catch-all term that collectively describes all discharges that occur as an aberration to the normal course of events.

This terminology will be used throughout this evidence.

4.4 Other terminology that is commonly used is “wet weather” and “dry weather” discharges. Again, these are useful terms for creating a distinction between discharges that occur as a result of rainfall and those that occur as a result of some other cause, respectively.

4.5 With the resource management process under the Resource Management Act 1991 (the Act) being, at least in part, effects based, it is generally inappropriate for planning evidence to address the “need” for an activity.

---

<sup>1</sup> Section 42A report, Section 1.

However, in this case it is necessary and relevant, albeit for the reasons that are the opposite of what are the normally the case.

4.6 The proposal seeks to obtain resource consent for aberrational discharges of wastewater principally to the coastal marine area, but also in some circumstances where the discharge may be to land and thereafter to the coastal marine area. It is the nature of aberrational discharges that they occur in exceptional and rare circumstances. Put simply, it is not reasonably practicable, and effectively not possible, for the applicant to avoid such discharges 100 percent of the time. This is because:

- (a) The reticulation system is (necessarily) in close proximity to the coastal marine area; and
- (b) the reticulation system receives inflows from a large and complicated reticulation network; and
- (c) it is not possible to predict the maximum rain event that can affect the catchment; and
- (d) the system relies on pipes, pump stations, and human operators, all of which are unavoidably fallible.

4.7 However, it is possible to reduce the risk and the frequency of such events to very low levels and this is the applicant's focus (see Mr Thiar's evidence). The evidence of Messrs Cuthbertson and Ruffell provides further information about how the risks can be reduced through improvements in the wastewater reticulation networks. But, as stated above, it is not possible to avoid aberrational discharges entirely. This is because, whilst for example greater volumes of emergency storage can be provided, it is always possible that that storage be overwhelmed. Pipes and reticulation fittings can continue to be reinvested in and upgraded, but there is always the possibility of a discharge from breakage caused by an earthquake, earth movement or pipe defects. The evidence of Mr Railton is important in this regard.

## 5. STATUS OF THE ACTIVITY

- 5.1 The status of the discharge of untreated wastewater to the coastal marine area is assessed as being a non-complying activity. The reasons for this assessment are set out in Section 3.0 (page 21) of the application and in the Section 42A report. Ms Lojkine and I are in agreement on the matter of status.
- 5.2 The principal reason why the activity cannot meet the requirements of the relevant discretionary rule (CMr.47 NRMP) are that there are some water classification standards that may not be able to be met in all instances and circumstances.
- 5.3 A discharge permit to discharge odour to air is also sought. That discharge permit is a discretionary activity under Rule AQr.53 (AQP).
- 5.4 As the two activities are inherently linked – one cannot occur without the other – and so it is appropriate that for the purposes of determining the status the applications be “bundled” and both be considered as having a non-complying status. Both are therefore subject to the tests set out in Section 104D.
- 5.5 Section 104D is a particular section of the Act that applies only to non-complying activities. In this case, the resource consents cannot be granted unless either the adverse effects on the environment are no more than minor, or the activity is not inconsistent with the objectives and policies of the NRMP.

## 6. THE ROLE OF “PROBABILITY” WHEN ASSESSING EFFECTS

### Meaning of effect

- 6.1 Section 3 of the Act defines “effect” as follows:

*In this Act, unless the context otherwise requires, the term effect includes—*

- (a) any positive or adverse effect; and*
- (b) any temporary or permanent effect; and*
- (c) any past, present, or future effect; and*
- (d) any cumulative effect which arises over time or in combination with other effects—*

*regardless of the scale, intensity, duration, or frequency of the effect, and also includes—*

- (e) any potential effect of high probability; and*
- (f) any potential effect of low probability which has a high potential impact.*

6.2 It is evident that the definition contains a temporal element. That is, the timing and duration of an effect is an inherent component of determining an effect. Therefore, by extension, it is my opinion that in assessing the magnitude of an effect, the temporal characteristics of that effect may also be taken into account. Everything else being equal, if a certain event were to have a particular adverse effect, and that event occurred more often, then that event could be assessed as having a greater adverse effect than if the event occurred less often.

6.3 I consider this interpretation to be particularly clear when clauses (e) and (f) of Section 3 are considered. With the definition making a distinction between effects of high and low probability, it is self-evident that the frequency or probability of a certain effect occurring is an important factor in determining the magnitude of the effect (*viz.* whether the overall effect is found to be less than minor, minor, more than minor or significant).

### **MetOcean Solutions Ltd (MOS) Modelling**

6.4 The author of the Section 42A report, Ms Lojkine, and her advisors Ms McArthur and Dr Phillips and Dr Fisher have acknowledged that the modelling undertaken was conservative.

6.5 However, I think it is important to summarise, from the evidence of other witnesses, how conservative the modelling was.

6.6 Mr Thiart comments on the modelling from an operational point of view and states:

- (a) A four-hour discharge would be a rare event, and would only occur after a catastrophic pipe failure or during an extremely heavy and prolonged rain event.*

- (b) The three industrial contributors would be instructed to shut their pump stations down which would reduce the overall flow volume (although during a rain event this contribution is expected to be small);
- 6.7 Ms Johnston also provides commentary on the conservatism of the modelling and suggests caution against using the plume too definitively. She identifies that a range of factors in her paragraph 41, and these include:
- (a) Conservative duration;
  - (b) No recognition of wet-well storage;
  - (c) Modelling methodology was devised and implemented to provide worst case scenario;
  - (d) The concentrations of contaminants may be higher than what would be realistic; and
  - (e) The discharge compositions were the maximums, rather than the medians over all of the commercial contributors.

#### **Consideration of Probability in Determining Overall Effect**

- 6.8 In reading the Section 42A report it is my impression that the authors have not truly addressed the issue of probability when coming to a view about the magnitude of the effects on the environment. This deficiency has flowed through to the assessment against the relevant statutory documents.
- 6.9 It is my view that they have conceptualised their assessment as follows:
- (1) that a worst-case aberrational discharge event (illustrated by the MOS modelling) could occur;
  - (2) that the effects on the environment of that particular event need to be assessed, and
  - (3) that **that** assessment represents the actual and potential effects of the proposal under Section 104 RMA.
- 6.10 In my consideration, the matter of probability is missing from that methodology. In making the assessment of actual and potential effects on the environment, it is my opinion that the full temporal period of the consent being sought should be considered. In fairness, Ms Lojkine certainly recognises the

temporal aspects, but it does not appear to come through in Dr Phillips', Ms McArthur's or Dr Fisher's assessments.

- 6.11 In this case a 20-year consent has been sought. The type of event that was modelled, has, in terms of volume, only been recorded once before, and that was before the 2013 upgrade was completed. Since the upgrade several discharges have occurred but, as shown in the data bundle, they are a tiny fraction of the volume of the modelled event. Further, all but one were dry weather discharges for which the cause was identified and corrected.
- 6.12 Considering that 4 years has passed since the completion of the 2013 upgrade and the term sought is 20 years, in terms of probability, the modelled event may be expected to occur only once or not at all during the term of the consent.
- 6.13 This problem with prediction where both incidence and receptor conditions are multi-factorial and themselves are affected by different probabilities for potential chains of causality is not uncommon in resource management. In such cases the enterprise is not empirical or even scientific in a traditional sense and can be influenced value judgements including political choices that bias risk assessment. The applicant has not chosen to analyse these into a probability tree based on scenario analysis as the assumptions and predictions would still be so unscientific as to overstate the reliability of the method. A judgment of effect magnitude is required and I consider the judgment in the s42A reports is overly conservative because of an over reliance on the worst case event.

## **7. NEW ZEALAND COASTAL POLICY STATEMENT**

- 7.1 Ms Lojkin summarises the objectives of the NZCPS<sup>2</sup>. I broadly agree with her summary.
- 7.2 In paragraph 5.99 Ms Lojkin discusses the precautionary approach and finds that the lack of certainty about the effects on the coastal environment should trigger a precautionary approach and a reduced term of consent to enable a greater level of understanding to be developed.

---

<sup>2</sup> Section 42A report, paras 5.92 to 5.98,

- 7.3 I would first note that any policies in the NZCPS must, of course, be read in the context of any application. As I previously indicated, the application is for an activity that the applicant has only a limited amount of control over. Therefore, it should not be seen as an application for an activity that is occurring at the discretion of the applicant and which can be ceased by a decline of consent.
- 7.4 I do not consider the precautionary principle relevant here because:
- (a) There is no possible pre-caution available of avoiding a long standing activity in which a community has based its fundamental waste management arrangements;
  - (b) The worst case scenario is able to be modelled with certainty and its probability categorised as low with a degree of uncertainty. The effects are also low for most receptors and not irreversible. There is credible evidence of a risk of loss of species.
- 7.5 I accept some elements of adaptive management to better analyse risk are warranted in the conditions and to ensure the incidence probability trend line does not move in an undesirable direction without re-consideration of the risk matrix.
- 7.6 Policy 11 is relevant, and I acknowledge the report of Dr Fisher. As stated in the evidence of Mr Thiart and Mr Railton, there is not practicable way of effectively reducing the BOD loading in the wastewater streams. I also refer to the evidence of Mr Hudson and Ms Johnstone who observe that the modelling indicates that the plumes largely stay within the tidal channels and are effectively flushed by the large tidal exchange. I restate my assessment that the extremely conservative nature of the modelled event, and the low probability of such an event occurring over the 20-year term sought that the effects are likely to be significantly less than the worst case.

- 7.7 The NZCPS contains a strong policy framework in relation to water quality in the coastal environment. Policy 23 is clearly the most relevant:

***Policy 23 Discharge of contaminants***

- (1) *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 contaminants to be discharged, the particular concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if that concentration of contaminants 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 a mixing zone.*
- (2) *In managing discharge of human sewage, do not allow:*
- (a) *discharge of human sewage directly to water in the coastal environment without treatment; and*
  - (b) *the discharge of treated human sewage to water in the coastal environment, unless:*
    - (i) *there has been adequate consideration of alternative methods, sites and routes for undertaking the discharge; and*
    - (ii) *informed by an understanding of tangata whenua values and the effects on them.*

- 7.8 Policy 23(2) provides a strong guidance that the discharge of untreated human sewage should not be allowed.

- 7.9 The Department of Conservation prepared a set of guidance notes to support the implementation of the CPS. A guidance note entitled “*What does Policy 23 mean for discharges of untreated human sewage?*” is provided. I have produced this guidance in full in the application, but I will repeat it here as it is important when reading Policy 23.

*“Policy 23 concerns the discharge of contaminants, including human sewage. Policy 23(2)(a) is strong direction against discharges of untreated human sewage to water in the coastal environment. It signals that very clear justification should underpin any provision for discharge of untreated sewage to water in the coastal environment. However, it is not a rule, and does not mean that resource consent applications that involve discharges of untreated human sewage cannot be approved. Nor does it mean that such discharges must be classified as prohibited activities in regional coastal plans and regional plans.*

*As with all management of natural and physical resources, particular situations must be looked at in context. In relation to activities involving the discharge of human sewage the relevant context will include location, frequency, duration, volume, level of treatment, and the extent to which the discharge is the best practicable option (within a relevant timeframe). Relevant matters will vary according to the source of a discharge (e.g. from a treatment plant, or an overflow from a reticulation network) and whether it is in the course of normal operation or caused by an anticipated and perhaps unavoidable operational disruption (such as a blockage, power interruption or overflows in some wet weather events). There is a continuum that should result in different discharges of human sewage being dealt with differently within plans, both in policies and activity classifications (rules), and through the determination of resource consent applications. Clause 4 of Policy 23 provides particular direction in respect of discharges involving both sewage and stormwater.*

*Policy 23 should also be considered together with objectives and other policies in the NZCPS 2010 which address issues of discharge, water quality and infrastructure. The complete statutory framework for RMA decision making in relation to discharges both in relation to plans and consent applications applies. Sections 69 and 70 of the RMA provide some direction for rules and sections 107 and 108(2)(e) and (8) provide guidance for resource consents and conditions.” ([www.doc.govt.nz](http://www.doc.govt.nz), emphasis added)*

- 7.10 Policy 23 aims to ensure discharges of untreated sewage are not consented as an activity where that is the regime for managing discharge.” It should not be read as a prohibition against low probability system failure that can never be practicably avoided. That is over-reading of Policy 23.
- 7.11 I consider that it is clear that the intent of the policy was to direct (through the use of the word “avoid”) that the strategy of managing untreated sewage by the method of direct discharge into the coastal environment is no longer appropriate. In the past, some people, communities and local authorities have seen fit to manage sewage this way, and the policy identified that this should not continue. However, this is not what is being proposed here. The applicant is not proposing to actively manage wastewater in this way.
- 7.12 Policy 21 NZCPS is also relevant but pertains to long term enhancement of degraded water quality. Based on the evidence of Ms Johnston the discharges do not contribute to any long-term chronic degradation of water quality in the Waimea Inlet. This is particularly the case since the April 2013 upgrade as can be seen from the relevant sheets in the data bundle (e.g. A2).

## **8. NELSON REGIONAL POLICY STATEMENT**

- 8.1 Chapter 9 is most relevant and contains Objective WA1.2.2:

*The maintenance and enhancement of coastal water quality to protect fishery, fish spawning and aquatic ecosystems and, in specific areas, to protect shellfish gathering, contact recreation, and cultural and spiritual values.*

- 8.2 Policy WA1.3.3 then follows:

*To control point discharges through the use of resource consents and appropriate conditions in order to ensure that water quality classifications are met and sustained.*

- 8.3 The following listed methods (WA1.4) are considered to be relevant to this assessment:

*When considering resource consent applications for discharges to natural water, Council will assess them against the following criteria:*

- i) the need for the discharge;*

- ii) *the likely effects of the discharge on the receiving environment;*
- iii) *if classified, the classification of the water body and the likely effect of that discharge on maintaining that classification;*
- iv) *the requirements of section 107 of the Act;*
- v) *available means of avoiding, remedying or mitigating likely effects on the environment;*
- vi) *the costs and benefits of alternative means of achieving the desired outcome including the 'do nothing' option; and*
- vii) *the potential to offset adverse effects through environmental compensation. (WA1.4.4, p98)*

Many of these criteria are consistent with the corresponding NRMP provisions, and are therefore discussed below.

- 8.4 The following “Anticipated Environmental Results” (WA1.7, p101) are considered to provide a clear picture of what the NRPS seeks to achieve. The one method of particular relevance is as follows:

*Rapid and effective response to emergency or accidental discharges resulting in their effects being remedied or mitigated (WA1.7.2)*

- 8.5 The RPS provides a suitable structure and scope to allow for the consideration of this application. More specific policy guidance is then found in the Nelson Resource Management Plan (NRMP).

## **9. PROVISIONS OF THE NELSON RESOURCE MANAGEMENT PLAN**

- 9.1 The application document contains a comprehensive assessment of the most relevant policy provisions of the NRMP. This includes the district wide objectives and policies that relate to coastal water quality and discharges.
- 9.2 At its core, the consideration of this activity is an attempt to find a balance between provision of essential infrastructure on one hand, and allowance of acceptable adverse effects on the environment on the other. To some extent the two issues are mutually exclusive. In other words, by providing for infrastructure there will always be the possibility of aberrational discharges, and the complete avoidance of any adverse effects on the Waimea Inlet may well require the discontinuation of the Stoke and Richmond settlements in

their current form. I have presented this as a counter – factual and, of course, this is not entirely the case as ways should be sought to minimise the adverse effects on the Inlet, whilst still providing for the infrastructural needs of the community. But from the evidence of Messrs Thiar and Railton the options for achieving this, over and above what has already been done, are limited. But clearly ongoing technological improvements, understanding and capital investment will continue to assist with reducing the frequency and severity of the aberrational discharges.

- 9.3 The provisions of the NRMP reflect this apparent dichotomy. Resource management issues (Chapter 4) and District wide objectives and policies (Chapter 5) support the development of the community and the provision of services, while the provisions relating to the coastal marine area support the environmental outcomes. The most significant provisions are now considered.

### **Population Characteristics and Competing Demands**

- 9.4 Resource Management Issue R13 provides some commentary:

*R13.i People and communities are a part of the District's environment. Change in the number and characteristics of the local population (both resident and visitor) influences the means by which the well-being, health, or safety of that population is provided, and places additional demands on the District's natural and physical resources.*

*R13.ii Population growth rates have fluctuated in the past, for reasons which have little to do with district or regional plans. Nevertheless, it is important that assumptions are made, for the purposes of the Plan, as to likely rates of future growth. The Council regularly monitors changes in population, household and visitor numbers, along with other indicators.*

*R13.iii Many of the District's resources, particularly infrastructural resources, are approaching capacity in terms of the population they can serve. Substantial reinvestment is likely to be required if growth is to continue at present levels.*

#### **R13.1 The issue**

*RI3.1i Sustainable management of natural and physical resources, including financial sustainability, in the face of change in the number and characteristics of the District's population.*

- 9.5 These issues provide context that development of communities and the sustainable management of those effects is a matter that the commissioners should have regard to.
- 9.6 The resource management issues also identify competing demands. Resource management issue RI16 explains that, within resource management, there are always competing demands or values attributed to resources.

### **Network Utilities**

- 9.7 Chapter 5 of the NRMP identifies the district wide objectives and policies. DO14 relates to subdivision and development.
- 9.8 Objective DO14.3 supports the provision of services to subdivided lots and developments in anticipation of the development of those sites. Clearly the ongoing servicing of lots and the provision of appropriate infrastructure is anticipated by the NRMP.
- 9.9 Objective DO14.4 relates to network utilities and states:

*Efficient use of network utilities infrastructure while avoiding, remedying, or mitigating the adverse effects of utilities on their surrounding environments.*

The reason for the objective is explained as follows:

*The growth of the Nelson community has resulted in the development of a significant network utility infrastructure to support the community. It is important that efficient use is made of this infrastructure of network utilities as they are often significant community assets. While network utilities are in many cases essential to the community, it must be recognised that they can generate adverse effects on the environments surrounding them. It is appropriate that the adverse effects of network utilities be minimised.*

- 9.10 Policy DO14.4.1 states:

*Management of network utilities that promotes their efficient use.*

And is explained by:

*In most cases existing network utilities represent a considerable investment and are substantial community assets. It is appropriate that these assets be used and developed in an efficient manner. This is in line with the intentions of Section 7 of the Resource Management Act 1991 in relation to physical resources.*

I consider that the efficient use of network utilities needs to be kept in mind when considering alternatives to the existing facilities, or any requirements for significant additional expenditure or facilities that may be called upon only very infrequently to assist with aberrational discharges.

9.11 Finally, Policy 14.4.3 is to:

*Ensure that the adverse effects of network utilities on the surrounding environment are minimised.*

And is explained by:

*Network utilities have the potential to cause adverse effects on the environment surrounding them. ... Any development of new or existing network utilities should minimise the potential adverse environmental effects of the utilities on the surrounding environment.*

Clearly, the effects of network utilities are anticipated, but are to me “minimised”. The words “avoid” or “shall be avoided” are not used.

## **Coastal Marine Zone**

9.12 The most specific provisions come from the Coastal Marine chapter and, by reference, also to the coastal marine water quality standards schedule (Section CMs). The overarching objective guiding the policy that follows is:

### ***Objective CM6 coastal water quality***

*Maintenance and enhancement of the quality of Nelson’s coastal water.*

9.13 There is extensive policy that follows, and I therefore break it down into some manageable blocks.

Water quality standards and reasonable mixing

9.14 The following policies are relevant:

***Policy CM6.1 marine water quality standards***

*Coastal marine water quality standards should be maintained or enhanced to reflect community aspirations and tangata whenua values for:*

- a) *management for fisheries, fish spawning, aquatic ecosystem, and aesthetic purposes over the whole Coastal Marine Area, and*
- b) *contact recreation, shell fish gathering, or cultural purposes, in specified parts of the Coastal Marine Area.*

***Policy CM6.2 marine water quality standards***

*Coastal marine water quality standards shall be managed for the purposes set out in the following water quality classes and associated standards:*

- a) *Fisheries, fish spawning, aquatic ecosystem, and aesthetic purposes, Class: FEA, Area of application: to the entire Coastal Marine Area; or*
- b) *Contact recreation purposes, Class: CR, Area of application: generally 200 metres seaward of mean high water springs within the areas identified as "Contact Recreation Overlay" on Planning Map A1; or*
- c) *Shell fish gathering purposes, Class: SG, Area of application: the area identified as "Shell Fish Gathering Overlay" on Planning Map A1, which encloses a zone extending from the 10m-40m depth contour in Tasman Bay; or*
- d) *Cultural purposes, Class: C, Area of application: Delaware Inlet (refer Planning Map A1, 'Cultural Overlay').*

9.15 The application document established, and it is accepted by all parties, that the entire coastal marine area in the vicinity of the discharge points is to be managed for the purposes of FEA (fishing, fish spawning, aquatic ecosystem, aesthetic purposes) and, in specified locations some of which are nearby to discharge locations, for the purposes of CR (contact recreation). The

locations of the FEA and CR water classification areas are shown on Sheet C1 Map Bundle.

***Policy CM6.4 mixing zones***

*In considering what constitutes a “reasonable mixing zone”, in any particular situation, account will be taken of:*

- a) the purposes for which the water is managed, and*
- b) the sensitivity of the receiving environment (i.e. available dilution and dispersal and the proximity of areas valued for ecological, recreational, cultural, shellfish gathering or commercial fishing reasons), and*
- c) the nature of the discharge including contaminant type, concentration and volume, and*
- d) the location and design of the proposed outfall and the potential for improving the same, and*
- e) the proposed method of treatment and the potential for improving that method, and*
- f) the need to confine any significant adverse effects to the mixing zone, and*
- g) the desirability of keeping the size of the mixing zone as small as possible, and of keeping it away from the inter tidal area.*

9.16 A key consideration within these policies is the definition of a mixing zone. Prior to the completion of modelling by MetOcean Solutions Ltd, Cawthron concludes that:

*“Due to a lack of dispersal and plume propagation information, a spatially defined mixing zone was not able to be recommended. Therefore, for the purposes of this discharge application, ‘reasonable mixing’ is suggested to be defined as ‘1-2 full tidal exchanges’.”*

9.17 In the most recent Cawthron report (report 3091) submitted to the consent authority as Attachment V the mixing zones were able to be given an approximate spatial extent as shown in Sheets F1 to F8 of the Graphics Bundle. The corresponding discussion regarding defining reasonable mixing zones is provided in Section 2.2.3 of the Cawthron report 3091.

- 9.18 In defining reasonable mixing zones, there is an element of the “the tail wagging the dog”. In the normal course of events where an applicant had control over the various discharge parameters, a mixing zone would be determined from first principles and subject to the matters identified in policy CM6.4 above. A discharge would then have to comply beyond that mixing zone. In this case, however, the applicant has little or no control over any of the parameters of the discharge, including the timing, state of tide, volume, contaminant loading, weather conditions. As a result a reasonable mixing zone must necessarily be determined from when the modelling indicates that appropriate levels of dilution have been achieved (as shown on sheets F1 to F8 of the graphics bundle).

#### Assessment criteria

- 9.19 Policy CM6.5 identifies the relevant assessment criteria.

##### ***Policy CM6.5 assessment criteria***

*When considering new proposals or applications to discharge contaminants directly to water, or reviewing existing discharges, matters to be taken into account include:*

- a) the water quality classification for the receiving environment, and*
- b) the total contaminant load (composition/concentration/flow rate) of the discharge, and*
- c) the presence or absence of toxic constituents, and the potential for bio-accumulative or synergistic effects, and*
- d) the assimilative capacity (including available dilution and dispersal) of the water and the existing water quality, and*
- e) actual or potential uses of the water body and the degree to which the needs of other water users are, or may be, compromised, and*
- f) scenic, aesthetic, amenity, recreational and commercial fisheries values, and*
- g) the cultural and spiritual values of tangata whenua, and*
- h) the actual or potential risk to human health from the discharge.*

9.20 These matters are relevant and are assessed through much of the rest of this evidence.

### Effects of discharges

9.21 Finally, there are two policies that provide particular guidance on how the effects of discharges to coastal waters should be considered. Policy CM6.3 is general in scope, while Policy CM6.6 is specific – and relevant.

#### ***Policy CM6.3 discharges (general)***

*Discharges to coastal water should not, after reasonable mixing, result in a breach of classification standards or a reduction in water quality and the discharge should not (either by itself or in combination with other discharges) give rise to any significant adverse effects on habitats, feeding grounds, or ecosystems.*

#### ***Policy CM6.6 untreated sewerage discharges***

*Untreated human sewage should not be discharged to coastal waters, unless the discharge is:*

- a) of a temporary nature, and the effects are minor, or*
- b) associated with necessary maintenance work and then only if:*
- c) there has been consultation with tangata whenua in accordance with tikanga Maori, and*
- d) there has been consultation with the community generally,*
- e) it better meets the purpose of the Act than disposal on to land.*

9.22 In broad terms and when read together the direction of those policies suggest that discharges of temporary untreated sewerage discharges are not always inappropriate, but that:

- (a) After reasonable mixing water classification standards should not be breached (CM6.3);*
- (b) Water quality should not be reduced (CM6.3); and*
- (c) the effects should be minor (CM6.6).*

- 9.23 Of these policies CM6.6 is clearly the most specifically relevant to the proposed activity. CM6.3 is a generalised “catch-all” policy that applies generally to all discharges into the CMA. Therefore, I would place greater weight on (c) above when determining the extent to which a discharge is consistent with the outcomes sought by the NRMP. But, nevertheless, an assessment of the water classification standards is still appropriate, and indeed the two factors are not independent, with the water classification standards providing a guide as to what may be considered to be minor adverse effects.
- 9.24 An assessment of the relevant effects and compliance with the water quality standards is provided in the following section of this evidence.

## **10. EFFECTS ON THE ENVIRONMENT**

### **Estuarine Ecology**

#### Policy Framework

- 10.1 Policy 11 of the NZCPS contains what is a comprehensive framework for the protection of indigenous biological diversity in the coastal environment. The policy is to avoid adverse effects of activities on a threatened or rare species, ecosystems and habitats, and to avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on other vulnerable environments.
- 10.2 The NRMP also provides a framework, which predates the NZCPS 2010 but nevertheless remains relevant, which seeks to maintain or enhance the life-supporting capacity of coastal ecosystems.

#### Evidence and Assessment

- 10.3 Ms Johnston has produced several comprehensive documents that provide extensive information about the ecological effects of aberrational discharges. After caucusing with the Council experts Ms Johnston produced her latest assessment that utilised a set of matrices and an agreed methodology for assessing ecological effects. Clearly, it is not appropriate or practicable for me to summarise her evidence comprehensively and I therefore rely on her conclusions.

10.4 Through the agreed methodology Ms Johnstone concludes that:

*“the risk assessment criteria from the EIANZ (2015) suggests a ‘moderate’ risk of having a minor adverse effect on the high value taxa/habitats in Waimea Estuary”*  
(Cawthron report 3091, p21)

And

*“Combining these two methods of risk assessment, it appears that while there is ‘moderate’ risk to some high valued taxa and habitats, the overall risk (likelihood) of an effect occurring is ‘low’.”* (Cawthron report 3091, p22)

10.5 Cawthron report 3091 then goes on to present Ms Johnston’s overall conclusions and states:

*“Given that the monitoring results showed a lack of enrichment and/or toxicity indicators in the associated outfall channel sediments, and the risk assessments (Section 2.2.2) suggest low risk of adverse effects, I would still expect that after reasonable tidal mixing following an accidental discharge (of typical size and composition), that any wastewater-derived physico-chemical parameters should be at levels representative of background, and/or below guideline values and standards (plan rules), and the overall adverse ecological effects would be low/minor.*

*My conclusions are based on the following rationale/findings:*

- a) *The required contaminant dilution to reach guideline levels is low (1:48–1:85) and the available tidal dilution is reasonably high.*
- b) *Peak flow dilution calculations do not consider in-pipe dilution from rainwater (which in another study had increased the level of dilution 4–10 fold).*
- c) *The frequency of discharge events is low and is generally following a decreasing trend.*

- d) *Accidental discharges are not usually simultaneous (i.e. all sites are not discharging at once).*
- e) *The water residence time in the Waimea Estuary is short (0.6-11.6 days<sup>16</sup>), with massive tidal exchange, in the order of 30–50 billion litres.*
- f) *Modelling shows that under most conditions, the discharge plume is likely to be restricted to the tidal channels associated with each pump station.*
- g) *When the sediment and water quality at the PS receiving environments was investigated further, there was no evidence to suggest persistent adverse ecological effects (visible effects and changes to sediment chemistry). Results indicate dominant influences from stormwater, road run off and riverine inputs.*
- h) *The estuarine species in the Waimea Estuary are generally considered adaptable and hardy. Their resilience to the naturally dynamic nature of the estuarine ecosystem makes them reasonably well suited to withstand short-term discrete events such as accidental wastewater discharges. Long lasting adverse ecological effects from such an event are considered unlikely and any impact will be reduced with each subsequent tidal exchange.” (p35)*

10.6 From these conclusions and reasons it is clear that there is a very high level of conservatism built into the assessment.

10.7 Ms Johnston supports these conclusions in her statement of evidence.

## Amenity

### Policy Framework

- 10.8 Section 7(c) RMA identifies that amenity values are a matter to which particular consideration must be given.
- 10.9 The NZCPS makes reference to the relevance and importance of amenity values, but more directly relevant provisions are found in the NRMP. Objective CM4 and supporting policies state:

**Objective CM4:** *The maintenance and enhancement of amenity values within the Coastal Marine Area.*

**Policy CM4.1:** *Activities within the Coastal Marine Area should avoid significant adverse effects on amenity values and public safety.*

**Policy CM4.2:** *Adverse effects of subdivision, use or development in the coastal environment should as far as practicable be avoided. Where complete avoidance is not practicable, the adverse effects should be mitigated and provision made for remedying those effects to the extent practicable.*

- 10.10 This policy guidance seeks overall the outcome sought by the objective, but also recognises that **significant** adverse effects should be avoided, and that complete avoidance may not be practicable.

### Evidence and Assessment

- 10.11 Ms Johnston comments on several occasions in the Cawthron 3091 report that the modelling indicates that aberrational discharge material largely remains in the tidal channels where it is available to be flushed by tidal exchange. However, she states:

*“Modelling ... illustrated that at all outfalls any potential for adverse effects is largely restricted to the tidal channel, with the exceptions of Songer and Saxton, which appear more likely to have wider-reaching, acute effects. However, I would still expect some moderately persistent edge effects where tidal circulation is limited (e.g. the high*

tidal zone) in the immediate vicinity of the outfall. These effects are likely to be mainly litter and odour, but there is also some potential for short-term smothering (from suspended solids), as well slightly increased concentrations of nutrients, contaminants and organics in these localised area..” (Cawthron report 3091, p34)

- 10.12 In line with Policy CM4.2 quoted above, such effects should be mitigated and managed. Mr Molloy presents evidence about this, and the emergency response plan documents, as well as the contractors operational document, were presented as Attachment E previously.
- 10.13 Overall, and from the modelling and assessment work undertaken it is my opinion that short term reductions in amenity values are possible. However, the infrequent and short term nature of these events reduces the significance of the effect to be minor.
- 10.14 Further improvements such as first flush capture and screening of gross solids will reduce the likelihood of such effects occurring. See the evidence of Messrs Railton and Thiar in this regard.

## **Natural Character**

### Policy Framework

- 10.15 There are statutory provisions in relation to natural character at all levels of the planning hierarchy. At its core is Section 6(a) within Part 2 of the Act:

*Section 6(a): the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*

- 10.16 This establishes preservation of natural character of the coastal environment as a matter of national importance.
- 10.17 Explicitly reflecting the NZCPS 1994 (as it was at the time) the NRMP stated that natural character of the coastal environment comprises a number of key elements, including coastal landforms; indigenous flora

and fauna and their habitats; water quality; marine ecosystems; and landscape values.

10.18 The NRMP contains Objective CM3 which states:

*The preservation of the natural character of the coastal environment, particularly at the land/sea interface, and including the maintenance of all values that contribute to natural character, and its protection from the adverse effects of use or development.*

And Policy CM2.1:

*Avoid the adverse effects of subdivision, use and development within those areas of the coastal environment which are predominantly in their natural state, and have natural character which has not been compromised.*

10.19 More recently, Policy 13 of the NZCPS 2010 explicitly states that natural character “*is not the same as natural features and landscapes or amenity values*”. Policy 13(2) goes on to identify that natural character “*may include matters such as:*

- (a) natural elements, processes and patterns;*
- (b) biophysical, ecological, geological and geomorphological aspects;*
- (c) natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;*
- (d) the natural movement of water and sediment;*
- (e) the natural darkness of the night sky;*
- (f) places or areas that are wild or scenic;*
- (g) a range of natural character from pristine to modified; and*
- (h) experiential attributes, including the sounds and smell of the sea; and their context or setting.*

10.20 Objective 2 of the NZCPS:

*To preserve the natural character of the coastal environment and protect natural features and landscape values through:*

- *recognising the characteristics and qualities that contribute to natural character, natural features and landscape values and their location and distribution;*
- *identifying those areas where various forms of subdivision, use, and development would be inappropriate and protecting them from such activities;*  
*and*
- *encouraging restoration of the coastal environment*

10.21 Policy 13 provides greater guidance as to how the preservation should be achieved. The policy provides a tiered approach by specifying the avoidance of all adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character, and for all other areas,

*Policy 13(1)(b): 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;*

10.22 It is evident that there are two components to this part of the overall policy: both to avoid significant adverse effects, but also to avoid, remedy or mitigate other adverse effects of activities. This means, in locations that are not of outstanding natural character, all adverse effects, whether they are significant or not, should be at least remedied or mitigated, and where they are significant they should be avoided.

## Human Health

### Policy Framework

10.23 Section 5 of the Act provides the underlying policy foundation for the consideration of health and safety within resource management. This follows through into Objective 6 of the NZCPS.

10.24 The NRMP contains a broad set of provisions that support the general maintenance and enhancement of water quality, but particularly in locations that are identified as being for the purposes of contact recreation. The Monaco contact recreation area is shown on Sheet C1 of the Graphics Bundle.

10.25 Policy CM6.14 also states:

*“The public should receive adequate warning in the event of water quality being degraded to a level sufficient to pose a significant threat to public safety or health.”*

(NRMP, p13-25)

Mr Molloy will comment further on these matters in his evidence

### Evidence and Assessment

10.26 Attachment U.1. provided to the Council contained comprehensive Quantitative Microbial Risk Assessment compiled by NIWA. The report utilised the modelling undertaken by MetOcean Ltd and stated the following conclusions:

*“High illness risk (>10% GI illness) areas were primarily associated with drainage channels and depressions where untreated sewage may accumulate, i.e., the spatial extents were relatively small. These tended to occur close to the discharge point, extending along the drainage channels.*

*Moderate illness risk (5-10% GI illness) was associated with drainage channels, and some areas of the adjacent intertidal flats. Factors such as tidal stage and wind increasingly determines the extent to which the inter-tidal*

*flats are contaminated. These levels of dilution may occur along the shoreline under specific conditions.*

*Low illness risk (1-5% GI illness) was associated with the intertidal flats, and drainage channels distant from the discharge points. These areas were also most prone to tidal stage and wind effects. They also occurred in areas likely to be accessible to the public, including the southern shoreline of the Monaco Peninsular, the southern shore of the Waimea inlet, and the north-eastern corner of the inlet, along Wakatu Drive and Point Road.” (p25)*

10.27 In addition to the QMRA report, Mr Hudson has provided a brief of evidence where he concludes:

*“Provided adequate steps are taken to reduce the likelihood and size of an aberrant sewer discharge event, and that a robust plan exists to respond adequately to a discharge event of this nature (extremely low probability, moderate risk), the overall health risk to local communities will be very low.”*

10.28 I have also had regard to the evidence of Mr Molloy who identifies the appropriateness of the response processes and the efficacy of the various response techniques.

10.29 Between the evidence of Messrs Hudson and Molloy, I am able to conclude that the potential effects on human health are likely to be very low.

### **Coastal Marine Water Quality Standards**

10.30 The Cawthron Institute addendum report (Cawthron Report No. 2588A) provided in Attachment H provided a detailed assessment and commentary on the standards that apply and whether they will be met after reasonable mixing.

10.31 In Section 2.2.7 the assessments against the FEA classification and the CR classification are in Sections 3.1 and 3.2 of the addendum, respectively.

10.32 Cawthron Report No. 2588A states:

*“The Compliance with the water quality standards can be considered on an acute (compliance during and immediately after a discharge) and on a chronic (long-term compliance with the standards) basis. As identified previously in this application there is a possibility that after reasonable mixing of 1 to 2 tidal cycles, an overflow discharge may not meet all standards. The most likely breach could result from aesthetic standards not being met due to the lack of flushing at the high-tide line around the discharge point. However, this is far from certain and it is expected that most or all discharges will achieve all standards after reasonable mixing.”*

10.33 The report predates the MOS modelling. As already pointed out, for numerous reasons, the modelling was highly conservative and very improbable to actually occur. Dr Phillips identified some more than minor acute effects resulting from the BOD concentrations under the modelled scenarios.

10.34 But as also pointed out in the Cawthron Report No. 2588A:

*However, as already established the discharges are extremely irregular and on a long-term basis the standards are met as the Waimea Inlet is suitable for the management purposes of fishing, fish spawning, aquatic ecosystems and aesthetic values, and also for contact recreation in specified locations.*

This assessment is consistent with my view of how the proposed activities should be regarded; that the probability and frequency (or return period) of the events should be considered. With discharges almost invariably significantly lower in duration and severity than that modelled, and with management response in place to address effects (particularly the high-tide amenity effects) I conclude that the FEA water classification standards may be breached, but only to a minor extent.

## 11. OTHER MATTERS AND STATUTORY CONSIDERATIONS

### Equivalent NCC Resource Consents

- 11.1 Mr Ruffell's evidence refers to the resource consents (RM105388V1 and RM105388A) obtained by the Nelson City Council that authorise the discharge of untreated wastewater to streams, land and the coastal marine area from the Council's wastewater reticulation system, including pump stations.
- 11.2 The application was granted by independent commissioner Mr Rob Lieffering, without the need for a hearing (pursuant to section 100 of the Act) as there were no parties who wished to be heard. The context of that application was virtually identical to this application, but was for the entire NCC reticulation network and the pump-stations that the NCC operates. In that case the commissioner accepted the findings of the Cawthron ecological report and health assessment.
- 11.3 These consents were issued on a global basis to allow discharges into a wide variety of receiving environments, including to land within the residential areas (if manholes surcharge), to freshwater, and to coastal waters including the Nelson Haven. The resource consents were granted for periods of 20 years each.
- 11.4 Ms Lojkine has attached a copy of the consent conditions to her s42A report, but a copy of the decision report itself can be made available upon request.

### Section 105

- 11.5 Section 105 applies and states:

*(1) If an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in 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.*

11.6 Section 105 introduces a mandatory consideration of alternatives and allows greater consideration of the need for the proposed discharge than is usually the case in resource management practice

#### Alternatives and Mitigation

11.7 More detail on possible alternatives is provided in the application document. However, the main alternatives that could be considered are:

- (a) allowing sewage to discharge onto land by surcharging from manholes and the reticulation network into the residential and commercial areas; and
- (b) provision of additional infrastructure (e.g. storage).

11.8 Physically, it would be possible to design the pump stations in a configuration that would, instead of having overflow outlets to the CMA, would instead force the reticulation pipes to backup and surcharge from the reticulation network. This would result in numerous discharge locations, many of which may still be in close proximity to the CMA and to which the sewerage may discharge in any event. Such an option would also cause a health hazard, and require an extensive clean-up effort. Mr Railton's evidence makes it clear that this is not an appropriate solution. Due to these considerations, this alternative is not considered appropriate or viable, and is not considered further.

11.9 Secondly, as pointed out in the application document, the provision of more infrastructure is always possible, but must be balanced against the substantial costs of doing so, and in recognition that even with extensive expenditure, discharges are very unlikely to be eliminated. The applicant, being a territorial authority, operates on a basis of

ongoing asset management planning and reinvestment. These processes are set out in more detail in the evidence of Mr Thiart. A core component of that asset management planning is consideration of appropriate levels of service being balanced against appropriate expenditure. The 2013 upgrade of pumpstations described by Mr Thiart is evidence of the efficacy of infrastructural reinvestment.

- 11.10 Mr Railton also provides detailed evidence about the pros, cons and costs of such alternatives.
- 11.11 Several of the submitters<sup>3</sup> have identified that reducing stormwater Infiltration and inflow into the wastewater reticulation system should be a priority. With Sheet A1 of the data bundle clearly showing that rain events cause the greatest number of aberrational discharges, reduction in stormwater I/I represents a viable option for the applicant to reduce wet weather overflow discharges. The evidence of Messrs Ruffell and Cuthbertson for NCC and TDC, respectively, illustrates the awareness of the issue by the local authorities, and also the complexity of “fixing” the problem.
- 11.12 Ms Plows (submitter #27) suggested that there should be greater consideration of land-based discharge. While land-based discharge is preferable in appropriate locations, there is no such land available around the pump-station sites. Wholesale re-routing of the wastewater flows would be prohibitively expensive.

### **Section 107**

- 11.13 In the resource consent application Section 107 was reproduced<sup>4</sup>. In my assessment it is clear that subsection (2) applies and that the aberrational discharges are of a “temporary nature”. Evidence presented within the Data Bundle, particularly sheets A2, A3 and A4, demonstrate just how unusual the discharges are since the facilities’ upgrade that occurred in 2013.

---

<sup>3</sup> Submissions: Cross (#5), Book Valley Community Group Inc (#11), Winslow (#12), Morrison (#19), Socker (#21),

<sup>4</sup> Resource consent application, p37

- 11.14 Further it is also considered that the aberrational discharges meet the test of having “exceptional circumstances” that justify the granting of the permit. Aberrational discharges are, over a long enough time period, unavoidable. It is the magnitude and frequency of the discharges that can be controlled. Based on the assessment of other witnesses, I consider that an appropriate balance has, for the present time, been struck between anticipating that discharges will occur and providing hardware and contingency measures to reduce their magnitude and frequency.
- 11.15 Ms Lojkine appears to agree that the discharges are both temporary and constitute exceptional circumstances.

## 12. SECTION 104D ASSESSMENT

- 12.1 As a non-complying activity, Section 104D must be considered. Section 104D states that a consent authority may only grant a resource consent for a non-complying activity if it is satisfied that either:
- (a) *the adverse effects of the activity on the environment ... will be minor; or*
  - (b) *the application is for an activity that will not be contrary to the objectives and policies of [the NRMP]*
- 12.2 In her assessment, Ms Lojkine has concluded that the application cannot pass the Section 104D(a) gateway, and in relation to the 104D(b) gateway she considers it to be contrary to some policies, but that there is uncertainty around this due to the lack of knowledge of adverse effects. Ultimately, it appears that Ms Lojkine sees a way through the second gateway test to enable consent to be granted for a term of 5 years.
- 12.3 On both of these conclusions, I disagree with Ms Lojkine’s assessment.

**104D(a) – Effects on the Environment**

- 12.4 In Section 6 of my evidence I provided my opinion that, rather than just looking at the effects of a single extreme event and using that to determine the effects on the environment, it is necessary and important to consider the frequency and probability of such events.
- 12.5 It has already be established through this evidence, and that of other witnesses, just how conservative the modelling is. At every stage of the modelling process conservative values and assumptions were made. These multiple conservative values and assumptions multiply together to create a highly improbably discharge scenario.
- 12.6 With discharges becoming increasingly rare and smaller, the probability of events occurring continues to decrease. As a result, the effects that can be identified that may be moderately persistent and occur for one, or a few days (for example, odour, reduced amenity, elevated faecal bacteria) must be seen as tiny fragments of time in the context of the rest of the year (recalling that the discharges since 2013 are occurring on average about once per year, with four out of the five being very small volumes). In other words for the vast majority of the year there is no discharge that is driving adverse effects on the environment.
- 12.7 Regarding discharges that could be more persistent, such as adverse effects on ecological values within the mixing zone, again, the modelled event is so conservative that it may never occur for the duration of the consent. Smaller events will occur but this will be very much more localised, and it is extremely unlikely that all of the conservative assumptions and factors used in the modelling will coincide.
- 12.8 The magnitude of the effects must be scaled against the size of the activity and the effects it avoids. The system avoids significant adverse effects from human occupation of the Nelson and Tasman districts while leaving small risks associated with aberrational discharges.

12.9 As a result, and based on the evidence of the experts, it is my conclusion that the effects are minor.

#### **104D(b) – Objectives and Policies of the NRMP**

12.10 Turning to the second gateway – that of whether the activity is contrary to the objectives and policies of the NRMP – I note that the plan is fundamentally effects based, and therefore it is usual that if an activity can pass the first gateway then it can pass the second also. I consider this to be the case here.

12.11 Based primarily on the evidence of Ms Johnstone and Mr Hudson, as well as on the evidence of the other witnesses for the applicant, I consider that when viewed over the full passage of time the proposal is not contrary to the objectives and policies. The activity will cause short punctuations in time when the relevant water quality standards will not be met, but for the vast majority of the time there will be no effects.

12.12 Policy 6.6 is the most specifically relevant, while clearly other provisions should not be ignored, **specific** policies must be given more weight; and Policy 6.6 is very specific and entirely relevant. Based on my assessment of the effects (which I again note are different to those of Ms Lojkine) I am able to conclude that the activity, being of a temporary nature and with minor effects, is not contrary to this policy.

12.13 The only other policy that really specifies an effects-based outcome is policy CM6.3. Based on the evidence of Ms Johnston and Dr Phillips, and taking into account the low probability of events, and the very low probability of extreme events, I do not consider that the application is contrary to the outcomes sought by this provision. The reality seems to be that the effects are avoided for the vast majority of the time when discharges are not occurring.

12.14 I see nothing in the NRMP that focusses on a fundamental re-engineering of city infrastructure. In fact quite the reverse. So any conclusion that such a large element of infrastructure is to be

considered unsustainable when measured against the NRMP is not credible.

12.15 As a result, I consider that the application is not disqualified by Section 104D and can be considered under Section 104.

### **13. PART 2 OF THE ACT**

13.1 The words “subject to Part 2” in section 104 results in Part 2 being available where, in the context of the matter at hand, the policy guidance is not comprehensive (e.g. NZCPS, RPS or District Plan, in that order).

13.2 Neither the NRMP, nor RPS, nor the NZCPS directly refer to aberrational discharges which, while not desirable, are inevitable sooner or later, and the location, timing and duration cannot be controlled. It may be that such applications were not foreseen and that it was assumed that all applications to discharge sewage to the CMA would have a measure of discretion. i.e. someone was choosing to do it and that they would have at least a modicum of control over the location, timing and volume of the discharge.

13.3 This gap is recognised (*albeit* implicitly) by the DOC’s promulgation of the guidance note above in relation to Policy 23 of the NZCPS. As that guidance note is not a statutory document, I consider that it remains necessary, and in fact very important, to consider the purpose and principles within Part 2.

13.4 Section 5 – the purpose of the Act – is informed by the principles that follow in Sections 6, 7 and 8.

13.5 Section 6 of the Act sets out the matters of national importance. The matters that are relevant to this application are:

- (a) *the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*

- (b) *the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*
- (c) *the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*
- (d) *the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*
- (e) *the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:*

13.6 The Section 6 matters set a strong basis for environmental protection, including that of the coastal environment. These matters have been largely addressed through the evidence of other witnesses and through my assessment provided above.

13.7 I consider a system that minimises the aberrational discharges of untreated effluent to best industry standards and hence causes minor effects recognises and provides for the matters in s 6.

13.8 Section 7 of the Act sets out other matters to which particular regard must be had. The matters that are relevant to this application are:

- (a) *kaitiakitanga*
- (aa) *The ethic of stewardship*
- (b) *the efficient use and development of natural and physical resources*
- (ba) *...*
- (c) *the maintenance and enhancement of amenity values:*
- (d) *intrinsic values of ecosystems:*
- (e) *...*
- (f) *maintenance and enhancement of the quality of the environment:*
- (g) *any finite characteristics of natural and physical resources:*

(h) ...

(i) *the effects of climate change:*

- 13.9 Matter (b) supports efficient use of physical resources, which include built the infrastructural resources that are the subject of this application. Evidence by Messrs Thiart, Railton, Cuthbertson and Ruffell illustrate the costs and complexity of such infrastructure.
- 13.10 What also becomes clear from the engineers' evidence is that such systems, while intended to deal with the delivery of day-to-day service, must from time to time be called upon to perform at a level that is significantly greater than that day-to-day level. In other words, infrastructural systems such as wastewater reticulation must be designed to accommodate the extreme rain events, while most of the time they are being utilised for relatively small flows. Therefore, there is a level of redundancy built into the systems.
- 13.11 The applicant faces an ongoing balance between providing sufficient infrastructure in order to deal with, on one hand, very rare, low probability events, and on the other hand, not over capitalising and investing significant resources, energy, hardware, materials and maintenance requirements into infrastructure that is only called upon on extremely rare occasions. It is to this issue that Matter (b) of Section 7 speaks. Whilst additional infrastructural resources can always be built, excessive redundancy cannot be seen as an efficient use of those resources.
- 13.12 Matter (g) is similar and recognises that physical resources can only have a finite capability. From the engineers' evidence an appropriate level of infrastructural development has been developed. Greater capacity may be possible but would not be an efficient use of the resources.
- 13.13 The value of ecosystems, the amenity of the environment and the overall qualities of the environment have been addressed previously in this evidence.

13.14 The Section 7 matters strongly favour granting consent based on a rational and reasonable continuation of the resources applied to the management of the wastewater system.

## 14. CONDITIONS

14.1 The comments below relate to the suite of recommended conditions in the Section 42A report.

### Condition 1 - Term

14.2 Ms Lojkin considers that, for the reasons set out in the s42A report, the application should be granted by for a term of 5 years. She states that this term *“will allow the consent holder time to gather further information and better characterise both the receiving environment and the likely effects of any discharge”* (para 7.3)

14.3 I disagree with this approach, for the simple reason that I do not see that the approach of requiring the resource consent to expire will achieve anything. The application was made on the basis that, from time to time, aberrational discharges occur, and that there is little or nothing that the applicant can do to avoid them, and their options for remedying or mitigating them are limited.

14.4 If measurable and realistic improvements to the system can be made the Council is well placed to identify them. The reasonable conclusion is there are none and consequently the 5 year term serves no purpose and may discourage optimisation of the existing system by further investment.

14.5 On the advice of Ms Johnston, Mr Neale, Ms McArthur and Dr Phillips, I accept the need for additional monitoring. That is a predictable and not inappropriate outcome of the resource consent process.

14.6 However, after collecting the information and having a better understanding of the effects, the consent holder will find itself back in the position of applying, at significant ratepayer expense, for another consent which is intended to cover discharges that are not desirable

nor intended by the applicant. I see little point in that process of forcing the applicant to go “back to the drawing board”.

- 14.7 Instead, I am of the opinion that, recognising that the information currently available is incomplete and that it will improve over time, the need for flexibility and adaptability into the future is entirely achieved by the use of Section 128. In fact, in my experience Section 128 is a rarely used tool, but one which would be ideally suited for this purpose. As information compiles, there will be the annual opportunity for the conditions to be reviewed.
- 14.8 Often, I find myself in the position of not agreeing with a reliance on Section 128 as it does not allow an inappropriate resource consent to be cancelled. However, in this case, it is appropriate that resource consent be granted for an undesirable activity because it is an essential and unavoidable part of running a major and complex network infrastructure. In that circumstance, having a broad and well-crafted Section 128 condition available is important, and in my opinion, preferable to forcing the expiry of the consent in 5 years.

#### **Condition 4 - causes**

- 14.9 With the consent being for aberrational discharges which are, by their nature, exceptional and cannot be foreseen, I think that it could be unwise to impose a condition that specifies the causes of discharges. The purpose of the consent is to catch everything, including the unforeseeable. I consider that it would be better to disallow the use of the consent to authorise any discharge from planned work or any other deliberate discharge, if indeed that is the purpose of Condition 4

#### **Conditions 8-11 – Monitoring**

- 14.10 A range of amendments to the monitoring conditions are recommended by Mr Hudson and Ms Johnston. An amended set of conditions will be circulated before the hearing.
- 14.11 The applicant is concerned that, through this consent, it will be forced to establish what amounts to a baseline monitoring programme for the eastern Waimea Inlet. I note that the estuary environment is

influenced by a vast array of pressures, and that the aberrational discharges are an extremely infrequent one.

#### **Condition 27 - Review condition**

14.12 The review condition is well worded and will achieve the outcomes that I describe above.

#### **Target for overflows**

14.13 I note that Ms Lojkine had not included a condition imposing any form of maximum number of discharges. While such a condition could be attractive to some, I concur that it is not appropriate. The applicant's target is zero aberrational discharges. By imposing a limit, there is a tendency for that number, whatever it may be, to become an acceptable "discharge up to" limit.

### **15. CONCLUSIONS**

- 15.1 The applicant operates a substantial sewer network that handles very large quantities of wastewater flow from two local authorities and three substantial industries. The network is in a vulnerable location around the margins of the Waimea Inlet.
- 15.2 From the evidence presented there are environmental pressures exerted on the Waimea Inlet routinely, and particularly during rain events when contaminants flow into the inlet with stormwater.
- 15.3 For the vast majority of the time the system works to a high level of performance and, with modern pumping infrastructure, power backups, and SCADA control systems, there are no discharges. However, from time-to-time – on average once a year or less – an aberrational discharge may occur from one of the four pump-stations. Since a large upgrade in 2013 the discharges have been decreasing in volume and frequency.
- 15.4 Mr Railton has independently confirmed that the system is appropriate and can be considered best-practice.

- 15.5 In my assessment the proposal is able to pass both gateways of Section 104D and be considered under Section 104 where a wider scope of considerations, including positive effects, may be considered.
- 15.6 The effects on the environment caused are highly infrequent, and transient, with the discharge being primarily located within the main tidal channels and being rapidly flushed by the massive tidal exchange. When considered with regard to the probability and observed frequency, I conclude them to be minor.
- 15.7 The NZCPS prescribes a precautionary approach, and one where adverse effects on the most important values of the coastal environment are avoided, and otherwise avoided, remedied or mitigated. The NZCPS does not provide a framework for assessment that comfortably applies the current application. Policy 23(2) does not appear to anticipate the inevitability of such discharges adjacent to urban coastal settlements.
- 15.8 The NRPS and NRMP support, on one hand, the provision and retention of robust network utilities, a growing population, and further development, but on the other hand to avoid, remedy and mitigate adverse effects on the coastal environment and the retention of amenity values and health and safety. I consider that this proposal strikes an appropriate balance between these outcomes.
- 15.9 The risks to human health are assessed as being very low, and manageable with a range of public health responses. Volunteered improvements to the system will, over time, capture small first flush events, and provide screening to remove gross solids from the discharge flow. Shoreline clean-up is proposed to mitigate the short-term reduction in amenity values and the production of odour.
- 15.10 Ecological effects also appear to be minor, based on the assessment of vulnerability and anticipated effects.
- 15.11 With ongoing investment, the frequency and severity of aberrational discharges will continue to decrease and I consider that the proposal is consistent with the purpose and principles of the Act, and that consent should be granted for a period of 20 years, subject to conditions and in particular a

Section 128 review condition that allows for future adjustments where necessary.

A handwritten signature in black ink, appearing to read "J. Butler", written in a cursive style.

---

Jeremy Zachariah Butler