

**Review comments to *‘Marine Environmental Monitoring – Adaptive Management Plan 2016-2017, For Salmon Farms; Ngamahau, Kopāua, and Waitata’*  
(Cawthron Report no. 2862 – July 2016 –marked  
‘DRAFT’)**

**prepared for King Salmon Ltd and Marlborough District Council**

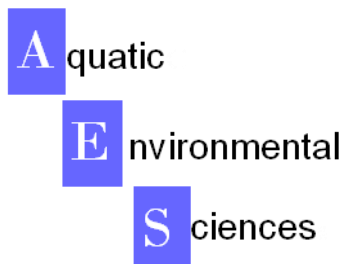
**by**

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Review date 26 July 2016



## 1. Introduction

As part of the final conditions of consent for the development of new salmon farms in the Marlborough Sounds New Zealand King Salmon was required to establish a Peer Review Panel for the purposes of reviewing and providing recommendations to the Council and consent holder in respect of the adequacy and appropriateness of various reports including the Baseline Plan, the Baseline Report, Marine Environmental Management and Adaptive Management Plan (MEM-AMP), and Annual Reports for farms consented by the Board of Inquiry.

NZSK has recently advised that the 'Richmond' Farm has been renamed to 'Kopāua'.

The previous MEM-AMP (2015-2016) for the subject farms (Cawthron Report 2679) was reviewed by the Peer Review Panel during April-May 2015.

The consent conditions for the subject farms requires the following of the Peer Review Panel with respect to the MEM-AMP:

*"The Peer Review Panel shall report to the consent holder and/or the Council.... on the following matters.....its assessment as to the adequacy of the monitoring and marine farm management and other actions proposed to achieve the requirements of Conditions [varies per farm] and whether the actions and methods are in accordance with good practice, and any recommendations regarding changes to the monitoring proposed or any requirement for further modelling"*

## 2. Review of MEM-AMP 2016-2017.

### General comments

- We find the reports well written, logical, and adequate (subject to the comments noted below) for the monitoring and management of the farms as required of the MEM-AMP. The monitoring described within the report are in accordance with what could be considered best practices, and it has been pleasing to see that the "Best Management Practice guidelines" (MPI, 2015) for benthic environments have been applied where the consent conditions have allowed.

### Specific comments

- **Table 1 (page 1)** – it is not clear what site is referred to for the table foot note (\*There is not requirement for environmental monitoring in the conditions of this Consent). Please make this clear.
- **DIT** –Have removed this footnote
- **Table 2 (Page 5)** – Photographic quadrats are not mentioned for SOFT SEDIMENTS, yet are required for ES score assessment, and will be conducted as per Section 3.3 – please include in Table 2.
- **DIT** –Have included photographic or video quadrats in Table 2

- **Table 2 (Page 5)** monitoring component labelled "Lighting effects - Water column Biology" has the status "not required to be monitored under this MEMAMP". A brief description of why this is the case would be good.
- **DIT** – have added in Table 2 – quarterly monitoring for 2 years will begin once feed levels are stable.
- **Table 3**, we had some trouble getting our heads around the "Zone 2/3 boundary" column. The N,S,E or W transect locations don't seem to match up with those in Figure 2. In the Table, NGA, WTA and KOP have W,S, and S respectively, whereas in the Figure they are N,N, and N.
- **DIT** – have fixed Table 3 and figure 2 to show correct directions
- With regard to the above, I think the single "Zone 2/3 boundary" location (be it N,S,E or W) has been chosen to represent the direction from the farm that represents the prevailing water current, and would therefore be the expected direction where a benthic effect is most likely to be measured. This makes sense, just need to confirm the correct direction is chosen.
- **DIT** – have fixed Table 3 and figure 2 to show correct directions
  
- **Section 3.1.1 Farm Stations/ Bullet 1** – ‘next round of monitoring’ – please clarify that this is relevant for this year’s monitoring as summarised in Table 2.
- **DIT** – have changed to state that this relates to ‘this’ round of monitoring
- **Table 3, (and footnote 5)**. Suggest to confirm how the 3 samples for analysis (initially) will be selected from the 5 replicates (i.e. randomly? to avoid any systematic bias).
- **DIT** – have changed to legend for table 3 and footnote 5 to clarify that 3 samples will be randomly selected for analysis.
- **Recommendations, 4.1**, first bullet point (P. 11): The use of depth bins makes good sense. Should take misleading spikes out of the data.
  - **BRK: thanks**
- **Recommendations, 4.1**, final bullet point (P. 12): Trialling Phytoplankton Community Indices sounds like a good approach.
  - **BRK: thanks**
- **Section 4.3 – Footnote 9**, Suggest that footnote is re-worded such that it is not MDC obligation to notify NZKS of planned changes to MDC monitoring, but rather, NZKS obligation to ensure they are informed/up-to-date.
  - **BRK: Updated**
- **Figure 4 & Section 4.6– Control Site Comparison for WQS breach**, It is not clear what ‘control sites’ are proposed for the proposed addition to the WQS flow diagram (presumably the far-field reference stations mentioned in Table 4). During the Bol hearing the modelling suggested that ‘control sites’ (i.e. those unaffected by any fin

fish farming) for water quality within Pelorus and QC Sounds were difficult or impossible to find. Accordingly, suggest that the proposed 'comparison to control sites' includes a step whereby the relevance/applicability of the 'control site' is confirmed at the time of comparison (i.e. with respect to inputs from the farm under consideration, and also cumulative effects and effects via other fin fish farms as well, tide flows at time of sampling etc.).

- **BRK addressed**
- **Section 4.6** – a sentence or reference seems to be missing in the second sentence?
  - **BRK addressed Table 5 ref was missing**
- **Section 4.6** – Recommendation re: DO saturation seems sensible and logical, as for the non-inclusion of Chl-a. For TN recommendation see bullet above – the control site must be unaffected from inputs of any other fin-fish farm and this should be confirmed during the process.
  - **BRK: thanks, added TN clarification**
- **Section 4.6.1** – We are of the same understanding regarding the interpretation of the WQS and the description here is useful.
- I presume this MEMAMP will also be reviewed by the **Tangata Whenua Panel**? Hopefully they will be reassured that the planned reef monitoring (Section 5) will suitably include customary kaimoana-gathering areas. And thus that Mauri will have been appropriately considered?
- With regard to the above, Section 5.1 refers to '...reefs... requested to be surveyed by stakeholders'. If these stakeholders include Tangata Whenua, then this should be explicitly stated. Let's make it clear that Tangata Whenua have been included in deciding on the reef survey areas.