

From: Abigail Mark-5230
Sent: 26 Nov 2018 15:55:37 +1300
To: 'Mark Preece'
Subject: RE: Environment Committee Agenda item
Attachments: Kopaua Compliance monitoring report 2017-18 amended condition 45.pdf, Te Pangu Bay monitoring compliance report 2017-2018 amended condition 33.pdf

Hi Mark,

Thank you for the further information. It is good to know that it will be included in the reports in the future. Below is my response to your questions/the reports I have amended.

Kopaua:

- NZKS did not have a system to discharge greywater onsite at Kopaua.
Amended report attached.

Ngamahau:

- There is an issue around the amount of nitrogen permitted to be discharged in the resource consents (basically it's less than the feed amount) – this should either be aligned or removed. Is this an easy process for the MDC to alter the consent?
To change this condition it would require a variation to the resource consent.

Te Pangu:

- Te Pangu is recorded as 'orange', despite having discussions with the MDC around what is considered best practice for monitoring benthic impacts. While this outdated standard no longer applies (as Te Pangu is now managed through best management practices), we would like this altered to a technical non-compliance.
I have amended the report to reflect this (attached) however condition 33d remains non-compliant so the overall rating for the condition is non-compliant.

I see you have sent me the PRP response this afternoon. I will take a look and get back to you if I have any further questions.

Kind regards,
Abi

Abi Mark
Environmental Protection Officer



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From: Mark Preece [mailto:Mark.Preece@kingsalmon.co.nz]
Sent: Wednesday, 21 November 2018 12:54 p.m.
To: Abigail Mark-5230
Subject: RE: Environment Committee Agenda item

Hi Abi

Thanks for the heads-up.

As an aside:

- We've now sorted the PRP report to ensure it's on our webpage (located with the other ones: <https://www.kingsalmon.co.nz/our-environment/best-management-practices/>)
- I've met with Cawthron and they are in the process of drafting a letter as to how we considered the PRP's report
- By way of this email all pens at Clay Point were farmed in over the last year. This validates the soft sediment samples Cawthron have taken. We'll report this in the Cawthron reports for the future
- External audits are recorded on our website: <https://www.kingsalmon.co.nz/our-environment/environmental-responsibility/>
- NZKS did not have a system to discharge greywater onsite at Kopaua
- There is an issue around the amount of nitrogen permitted to be discharged in the resource consents (basically it's less than the feed amount) – this should either be aligned or removed. Is this an easy process for the MDC to alter the consent?
- Te Pangu is recorded as 'orange', despite having discussions with the MDC around what is considered best practice for monitoring benthic impacts. While this outdated standard no longer applies (as Te Pangu is now managed through best management practices), we would like this altered to a technical non-compliance.

I am happy to discuss any of the above with you.

Thanks

From
Mark

From: Abigail Mark-5230 <Abigail.Mark@marlborough.govt.nz>
Sent: Wednesday, 21 November 2018 12:13 PM
To: Mark Preece <Mark.Preece@kingsalmon.co.nz>
Subject: Environment Committee Agenda item

Hi Mark,

As I mentioned when we met on Friday 9 November, I will be presenting a report on the NZKS compliance at Environment Committee on 22 November 2018.

For your information the agenda can be found following this link:

<https://www.marlborough.govt.nz/your-council/meetings?item=id:20lchd29817q9s4ki4y3>

Kind regards,
Abi

Abi Mark
Environmental Protection Officer



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The New Zealand King Salmon Company Limited- 2017/2018 Compliance Report for Coastal Permit (U140295) – Kopāua

Assessment of compliance with consent U140295

This report sets out an assessment of compliance with the conditions of the coastal permit (U140295) held by New Zealand King Salmon for their Kopāua salmon farm. The information in this report is based on the Kopāua Salmon Farm: Annual Monitoring Report (2017-2018), Reef Environmental Monitoring Results for the New Zealand King Salmon Company Ltd Salmon Farms: 2017, the Effects of Underwater Lighting on the Marine Environment at the Kopāua Salmon Farm and the Marine Environmental Monitoring – Adaptive Management Plan for Salmon Farms Ngamahau, Kopāua, and Waitata (2018-2019) prepared by the Cawthron Institute.

Compliance Status has been indicated using a monitoring traffic light system where **green** indicates compliance; **yellow** indicates technical non-compliance; **orange** indicates that a breach of effects based or best practice consent condition has occurred with minor actual or potential adverse environmental effects, and **red** indicates significant non-compliance where a persistent or significant breach has occurred causing adverse environmental effects.

Report prepared by: Abigail Mark Environmental Protection Officer

Date: 2 November 2018

Overall compliance status: Technically Non-compliant

Please note that the following consent conditions are representative only, they do not include the complete list of conditions of consent.

Condition	Comment	Status
34. The annual tonnage of nitrogen that may be discharged to the marine farm is to be limited to 7% of the tonnage of feed that may be discharged in accordance with Condition 35 and Table 1 (i.e. if up to 3000 tonnes of feed can be discharged then up to 210 tonnes of nitrogen can be discharged).	999 tonnes of feed was discharged at the site over the 12 month period prior to January 2018 sampling. Nitrogen input during this period was 6.7% just below the limit set by condition 34.	Green
35. The annual tonnage of feed that may be discharged to the marine farm is limited as follows: a. The initial feed discharged (in at least each of the first three years) shall not exceed the Maximum Initial Feed Discharge specified in Table 1; b. In any year, the tonnage of feed discharged shall not exceed the Maximum feed Discharge specified in Table 1; c. Any increase in feed discharged (from one year to the next) shall not exceed the Maximum Increase in Feed Discharge specified in Table 1; d. Whether or not the annual tonnage of feed discharge may increase above the Maximum Initial Feed Discharge, or may reach the Maximum Feed Discharge, is dependent upon compliance with Condition 36 below.	999 tonnes of feed was discharged at the site in compliance with the 1,500 tonne limit set in table 1.	Green
36. The annual tonnage of feed discharged to the marine farm may only be increased above the Maximum Initial Feed Discharge specified in condition 35, or above any subsequent allowable annual feed discharge level, if the following requirements are met:	999 tonnes of feed was discharged over the 12month period (one calendar year) in compliance with the 1,500 tonne limit set in table 1.	Green

The requirements of Condition 37

The requirements of conditions 38-44 (relating to compliance with Environmental Quality Standards (EQS)); and

Any specifications for marine farm management in the Marine Environmental Monitoring and Adaptive Management Plan (MEM-AMP) for that year (condition 65).

Table 1: Maximum initial and maximum annual feed discharges, and maximum increases in annual feed discharges (from one year to the next)

Farm	Maximum Feed Discharge (tonnes per annum)	Initial Discharge (tonnes per annum)	Maximum Increase in Feed Discharge (tonnes per annum)	Maximum Feed Discharge (tonnes per annum)
Richmond	1500		500	4000

Environmental Quality Standards (EQS)

38. The discharge of feed, marine biofouling and antifouling at the marine farm shall meet the requirements of conditions 39-44 relating to Environmental Quality Standards (EQS) at all times. Any breach of these requirements shall, as soon as practicable, be notified to the Marlborough District Council and the members of the Tangata Whenua Panel (refer to condition 77).

The EQS was not breached at any of the monitoring sites. No notification to Council and the Tangata Whenua Panel was required.

Environmental Quality Standards (EQS) - Seabed Deposition

39. EQS Compliance Zones shall be defined for the marine farm, in accordance with Figure 3 and the dimensions and area contained in Table 2.

Table 2: Maximum distances of EQS Compliance Zone 2/3 and Zone 3/4 boundaries from the nearest edge of the marine farm net pens; and the maximum total affected areas of Zones 1, 2 and 3.

Farm	EQS Compliance Zone boundary dimensions (maximum distances)		EQS Compliance Zone Area (Maximum area)
	Distance from nearest net pen to Zone 2/3 boundary	Distance from nearest net pen to Zone 3/4 boundary	Total area of Zones 1, 2 and 3 (the footprint)
	Metres (m)	Metres (m)	Hectares (ha)
Richmond	60	250	10

The Kopāua Salmon Farm: Annual Monitoring 2017-2018 report details the monitoring of the site in accordance with the EQS compliance zones as shown in table 2 of condition 39.

a. The above Zones shall be fixed.

b. Notwithstanding, condition 39A, the size and shape of the above Zones will be reviewed (to enable comparison with the zone dimensions contained in Table 2), after 3 years of operation at the Initial Feed discharge level in Table 1, as part of the Annual Report (refer to condition 67) for that year. The dimension and area of the Zones may be amended as a result of a recommendation in the Annual Report, provided that the total area of Zones 1, 2 and 3 does not exceed by more than 10% from the area specified in Table 2.

40. At all times, the seabed beneath and in the vicinity of the marine farm shall comply with the EQS specified in Table 3. Zone dimensions and area for compliance purposes shall be defined in accordance with condition 39. Enrichment Stage (ES) shall be defined in accordance with Figure 4 and table 5.

Table 3: Environmental Quality Standards (EQS) – Seabed Deposition

Zone	Compliance Monitoring Location	EQS
Zones 1 & 2 – beside and beneath the net pens	Measured beneath the edge of the net pens – ‘Pen’ Stations on Figure 3	ES ≤ 5.0 No more than one replicate core with no taxa (azoic), No obvious, spontaneous out-gassing (H ₂ S/methane), Bacteria mat (<i>Beggiatoa</i>) coverage not greater than localized/patchy in distribution.
Zone 3 – near to the net pens	Measured at the Zone 2/3 Boundary Stations on Figure 3	ES ≤ 4.0 Infauna abundance is not significantly higher than at corresponding ‘Pen’ Station Number of taxa >75% of number at relevant / appropriate reference Station(s)
Zone 4 – outside the footprint area	Measured at the Zone 3/4 Boundary Stations on Figure 3	ES < 3.0 Conditions remain statistically comparable with relevant / appropriate reference Station(s)

ES exceedance

a. In the event that the ES is up to and including 0.3 above the EQS for the 1/2 (Pen), 2/3 or 3/4 Zone Boundary Stations in Table 3, the consent holder shall in the year following receipt of confirmed notice of such an ES result through its monitoring (and allowing one month from any initial notice to provide for re-testing), reduce the amount of feed discharged to the marine farm by 20% of the amount discharged in the year before.

b. In the event that the ES is greater than 0.3 and not greater than 0.6 above the EQS for the 1/2 Pen, 2/3 or 3/4 Zone Monitoring Locations in Table 3, the consent holder shall in the year following receipt of confirmed notice of such an ES result through its monitoring (and allowing one month from any initial notice to provide for re-testing), reduce the amount of feed discharged to the marine farm by 40% of the amount discharged in the year before.

c. In the event that the ES is greater than 0.6 above the EQS for the 1/2 Pen, 2/3 or 3/4 Zone Monitoring Locations in Table 3, the consent holder shall with four months from the date the consent holder receives confirmed notice of such an ES result through its monitoring (and allowing one month from any initial notice to provide for re-testing), remove stock and fallow the site until compliance is achieved. Upon any re-stocking, the consent holder shall ensure that the amount of stock shall be designed to ensure that the ES levels required in Table 3 for the 1/2 Pen, 2/3 and 3/4 Zones Monitoring Locations will be met in the following year.

Environmental Quality Standards (EQS) - Copper and Zinc Levels

41. Composite samples of sediments beneath and beside the net pens (measured beneath the edge of the net pen - Pen Stations on Figure 3) shall be assessed against the ANZECC (2000) ISQG-Low criteria for copper and zinc; as a first tier trigger level.

Environmental Quality Standards (EQS) - Water Column

43. The marine farm shall be operated at all times in such a way as to achieve the following Water Quality Objectives in the water column:

a. To not cause an increase in the frequency, intensity or duration of phytoplankton blooms (i.e. chlorophyll a

The enrichment stage (ES) scores for Pens 1, 2, and 3 were 4.4, 4.2 and 3.7 respectively in compliance with the ≤ 5.0 EQS. Although the scores were in compliance with the consent EQS it is noted that this score has increased from last year’s scores of 2.9, 3.8 and 3.8 and demonstrate high enrichment levels at the pen stations.

The ES score for the 60N station was 3.9 in compliance with the Zone 1 & 2 EQS of ≤ 4.0.

The ES scores for the 250N and 250S stations were 2.3 and 2.4 respectively in compliance with the Zone 3 EQS ≤ 3.0.

The ES scores for the PS-Ctl-3, PS-Ctl-4, PS-Ctl-5, and PS-Ctl-7 stations were 2.0, 1.9, 2.2, 2.1, and 2.4 respectively in compliance with the <3.0 EQS.

No EQS breaches were measured so points a – c do not apply.

It is important to note that the report indicates that although the ES scores are within EQS limits for the OLE, there are some “raw variables which indicate that natural conditions have not been maintained at these stations due to low-level enrichment effects”.

Total recoverable copper and zinc concentrations were significantly below the ANZECC ISQG-Low trigger levels. The measured copper and zinc concentrations were also lower than the reported amounts measured at these stations last year.

a. The maximum measured Chl-a concentration was 3.81 mg/m3, within the consented limit of ≥5.0 mg/m3.

b. the report states that phytoplankton biomass and community composition did not show any atypical seasonal trends.

<p>concentrations greater than or equal to 5 mg/m³ [Note: water clarity as affected by chlorophyll a concentrations is addressed by this objective];</p> <p>b. To not cause a change in the typical seasonal patterns of phytoplankton community structure (i.e. diatoms vs. dinoflagellates), and with no increased frequency of harmful algal blooms (HAB's) (i.e. exceeding toxicity thresholds for HAB species);</p> <p>c. To not cause reduction in dissolved oxygen concentrations to levels that are potentially harmful to marine biota [Note: Near bottom dissolved oxygen under the net pens is addressed separately through the EQS – Seabed Deposition];</p> <p>d. To not cause elevation of nutrient concentrations outside the confines of established natural variation for the location and time of year, beyond 250m from the edge of the net pens;</p> <p>e. To not cause a statistically significant shift, beyond that which is likely to occur naturally, from an oligotrophic/mesotrophic state towards a eutrophic state;</p> <p>f. To not cause an obvious or noxious build-up of macroalgal (e.g. sea lettuce) biomass [Note: to be monitored in accordance with condition 66h].</p>	<p>It is noted that both condition 43a and b relate to long term temporal changes and cannot be fully assessed with the limited data gathered to date.</p> <p>c. Dissolved oxygen (DO) saturations were within the DO water quality standard (WQS) (>70%) beside the net pens. Although lower saturations were recorded in the surface 15 to 20m at the net pen in May and August, the report suggests that this was due to salmon respiration.</p> <p>d. All total nitrogen (TN) results within the WQS (≤ 300 mg-N/m³). According to the report: <i>Fine-scale sampling shows elevated downstream concentrations of some nitrogen species, however concentrations at 250m downstream (and sometimes at the net pen itself) were not outside historic variation recorded at the same or similar locations for that time of year.</i></p> <p>e. There was no conclusions drawn that suggested that any statistically significant shift beyond any natural occurring shift towards a eutrophic state was occurring.</p> <p>f. There is no comment indicating that an obvious or noxious build-up of macroalgal biomass has occurred. The reef monitoring report found no farm related effects on macroalgal biomass.</p>	
<p>44. The marine farm shall be operated at all times in such a way as to comply with Water Quality Standards (WQS), and associated responses, for the near-farm and wider-scale water column environment of Pelorus Sound. Two tiers of response to potential breaches of WQS shall be set, the first trigger further monitoring and the second to require reduced stocking on the marine farm following the next harvest of salmon on the marine farm. The WQS and responses shall be established as follows:</p> <p>a. For the first three years of marine farm operation, initial WQS for chlorophyll a (chl a), dissolved oxygen (DO), Total Nitrogen (TN) concentrations and an integrated trophic index to achieve the qualitative Water Quality Objectives a, c, d and e of condition 43 shall be specified in the Baseline Report (condition 64) and may be reviewed in the Annual Report at the end of the first and second years of marine farm operation (condition 67).</p> <p>b. The initial WQS shall be reviewed in the Annual Report at the end of the third year of marine farm operation (condition 67) and WQS specified to achieve the Water Quality Objectives a-e of condition 43. These WQS shall be reviewed through the Annual Report every three years thereafter unless any other Annual report (condition 67) necessitates earlier review.</p> <p>c. WQS shall be specified at the locations specified in condition 63c.</p> <p>d. In the Baseline Report and each Annual Report, a hierarchy of responses to potential breaches of the WQS shall be specified, including:</p> <p>i. A first level response requiring further monitoring and/or analysis to determine the operation of the marine farm is causing the relevant WQS not to be achieved; and</p> <p>ii. A second level response requiring a plan of action as soon as practicable, with clear timeframes to reduce effects on the water column and achieve full compliance with e WQS, through</p>	<p>The Kopāua site is being operated in compliance with the Water Quality Standards therefore no WQS response is required.</p> <p>The report covers the chl-a, TN and DO results as well as other water column monitoring to assess the WQS.</p> <p>The WQS have been assessed at the locations required by 44 c).</p> <p>No WQS was breached for three consecutive months therefore Amber Light response actions were not required.</p>	

<p>reduced stocking on the marine farm flowing the next harvest of salmon on the marine farm.</p>		
<p>Discharge of Greywater to Coastal Water 45. Greywater may be discharged from the staff facilities on the marine farm, including from showers, wash basin, kitchen and laundry facilities. The greywater discharge shall not exceed 1m³ per day from the marine farm. The consent holder shall ensure that an appropriate system is operated at the marine farm to determine the volume of greywater discharge. The results shall be provided to the Council not less frequently than once a year. The consent holder shall notify the Council of a non-compliance with this condition, and explain the reason for it, within one month of the consent holder becoming aware of the non-compliance.</p>	<p>Condition 45 greywater discharge volumes have not been provided to Council as there was no capability to discharge grey water during 2017.</p>	
<p>56. The following plans and reports shall be prepared by the consent holder, in order to address the potential effects set out in condition 54 and achieve the Purposes in condition 55.</p> <p>a. Prior to the initial placement of the first structure(s) at the marine farm, a Baseline Plan to specify the monitoring and analysis to be undertaken in order that baseline information can be obtained and analysed prior to the initial placement of the first structure(s) at the marine farm;</p> <p>b. Prior to initial placement of the first structure(s) at the marine farm, a baseline Report which presents the results from the monitoring and analysis undertaken in accordance with the Baseline Plan, makes recommendation for the development of the marine farm and the monitoring to be undertaken in the first year of operation of the marine farm, and specifies the initial WQS and responses in accordance with condition 44;</p> <p>c. For each year of operation of the marine farm, a MEM-AMP to provide a summary of the relevant recommendations from the previous year's Baseline Report or Annual Report, and specify the proposed monitoring and marine farm management actions for the following year. The MEM AMP may be prepared as on Plan jointly with the MEM-AMP(s) for other marine farms managed by the same consent holder.</p> <p>d. For each year of operation of the marine farm, and Annual Report to provide details of the monitoring results from the previous year, an analysis of the monitoring results (including in terms of compliance with the EQS), and recommendations for changes to the monitoring and marine farm management actions for the following year. The Annual Report may be prepared jointly with Annual Reports for other marine farms managed by the same consent holder.</p>	<p>a. A baseline monitoring plan produced by NIWA dated May 2014 has been provided to Council.</p> <p>b. A baseline report produced by NIWA dated May 2015 has been provided to Council.</p> <p>c. A Marine Environmental Monitoring Adaptive Management Plan 2017-2018 produced by Cawthron dated October 2016 has been provided to Council.</p> <p>d. An annual report produced by Cawthron which provides details of the first year of monitoring was provided to Council 1 May 2018. This report covers all aspects required by condition 56 d).</p>	
<p>58. Prior to finalising the plans and reports specified in condition 56, the consent holder shall provide them in draft form to the Peer Review Panel for its review, assessment, recommendations and reports, in accordance with conditions 68-74. The consent holder shall have particular regard to any recommendations from the Peer Review Panel in finalising these plans and reports. The plans and reports shall specify how the consent holder has had regard to any recommendations from the Peer Review Panel, if any recommendations have been adopted and the reasons why.</p>	<p>The annual report was reviewed by the Peer Review Panel. The report does not appear to specify how it has had regard to the Peer Review Report dated 27 April 2018, in technical non-compliance with this condition.</p>	
<p>59. Prior to finalising the plans and reports specified in condition 56, the consent holder shall provide them to the members of the Tangata Whenua Panel (see condition 77), and provide that Panel with the opportunity to:</p> <p>a. Receive and discuss with the consent holder the results of all</p>	<p>The annual report was reviewed by the Peer Review Panel.</p>	

<p>monitoring and analysis required by the conditions of this consent;</p> <p>b. Review and provide input to the preparation of the Baseline Plan and Baseline report, the MEM-Amp and the Annual Report, required by condition 56.</p>		
<p>60. Having had particular regard to any recommendations from the Peer Review Panel, the consent holder shall provide the following final plans and reports to the Council for its approval in terms of the conditions of this consent:</p> <p>c. Any Annual report which includes:</p> <p>i. Any changes in any WQS;</p> <p>ii. Any adjustment to the area and dimensions of the seabed EQS Compliance Zones; or</p> <p>iii. Any increase in the maximum annual tonnage of feed that may be discharged to the marine farm.</p> <p>The monitoring and analysis required in terms of the Baseline Plan shall not be commenced until the Baseline Plan has been approved by Council.</p> <p>No structure(s) shall be placed on the marine farm until the Baseline Report has been approved by the Council.</p> <p>No change may be made to any WQS, no adjustment may be made to the area or dimensions of any seabed EQS Compliance Zone, and there shall be no increase in annual tonnage of feed that may be discharged to the marine farm, until the relevant aspects of the Annual Report that includes that/those recommendations(s) is approved by the Council.</p> <p>Following its approval by the Council, the consent holder shall provide copies of the relevant final plans and reports to the Tangata Whenua Panel (refer condition 77).</p>	<p>c. The final annual report was provided to Council on 1 May 2018 following a review from the peer review panel.</p>	
<p>61. Other than as specified in condition 60, having had particular regard to any recommendations from the Peer Review Panel, the consent holder shall provide the following plans and reports specified in condition 56 to the Council and the Tangata Whenua Panel (refer condition 77), in accordance with the following timing:</p> <p>a. The first MEM-AMP - following the provision of the Baseline Report to the Council and prior to the first discharge of feed to the marine farm;</p> <p>b. Each subsequent annual MEM-AMP - 31 July each year.</p> <p>c. The Annual report - by 30 April each year.</p>	<p>b. the MEM-AMP for 2018/2019 issue date is 31 July 2018 this MEMAMP was provided to Council on 6 August 2018.</p> <p>c. The draft Annual report for 2017/2018 was provided to Council on 30 April 2018 with the final report provided 1 May 2018.</p>	
<p>65. The MEM-AMP shall specify the following:</p> <p>a. A summary of the recommendation from the Baseline Report (in the case of the first MEM-AMP for the marine farm) or from the previous year's Annual Report regarding marine farm management actions and monitoring (including any increases or decreases in the tonnage of feed to be discharged).</p> <p>b. A description of all monitoring to be undertaken for the coming year (detailed monitoring requirements are set out in condition 66). This shall include the methods, locations and frequency of the monitoring, including any control/reference sites. This shall give effect to any recommendations contained</p>	<p>a. recommendations from the previous reports have been used in the MEMAMP.</p> <p>b. The monitoring for each of the requirements of condition 65b has been outlined in the MEMAMP. The methods, locations and frequency of the monitoring of the three farms have been detailed. The recommendations from previous monitoring reports have been taken into account for the 2018/19 monitoring.</p> <p>c. The monitoring for EQS and WQS are detailed in the</p>	

<p>in the Annual Report for amendments to the dimensions and area of the EQS compliance Zones specified in Table 2 and/or to the location of the representative compliance monitoring Stations specified in Table 3, following the review of the results of the monitoring undertaken after 3 years of operation at the initial Feed Discharge level in Table 1.</p> <p>c. All monitoring and management actions to be undertaken at the marine farm in order to meet the requirements of conditions 38-44 (including any areas or decreases in the tonnage of feed to be discharged).</p> <p>d. Any other actions to be undertaken in order to address the potential effects from the operation of the marine farm set out in condition 54 and achieve the Purpose in condition 55, including to avoiding, remedying or mitigating any significant adverse effects from the operation of the marine farm identified in the previous year's Annual Report.</p>	<p>MEMAMP.</p> <p>d. The MEMAMP includes the monitoring for soft sediment habitats, reef habitats, the water column, and lighting effects in accordance with the condition of consent.</p>	
<p>66. The MEM-AMP shall include the following monitoring:</p> <p>a. The level of sampling and range of environmental variables, (e.g. sediment grain size, infauna, percent organic matter, redox & sulphides) to be measured annually at each of the near-farm benthic (soft-sediment) monitoring stations in order to determine compliance with the EQS - Seabed Deposition in condition 40. This includes appropriate farm-specific reference station, which may also double as far-field soft-sediment monitoring sites (see condition 66f);</p> <p>b. Monitoring in order to determine compliance with the EQS - Copper and Zinc levels required by conditions 41 and 42 using a decision-tree approach, whereby monitoring effort increases in focus and intensity as trigger levels (representing the increased likelihood of ecological effects) are reached.</p> <p>c. Monitoring in order to determine compliance with the WQS in condition 44. Throughout the term of the consent this shall include long-term water column monitoring for nutrient (NH₄-N, NO₃-N, NO₂-N, DRP, Si, TN and TP) and chlorophyll a concentrations, phytoplankton composition and biomass, salinity, clarity, temperature, turbidity and dissolved oxygen (DO) at locations stipulated in condition 63c. The precise location of the long-term monitoring stations and the range of specific nutrient parameters monitored may, however, be adjusted over time in response to monitoring results and/or in response to modelling considered necessary by the Peer Review Panel in accordance with condition 70c. This monitoring is to be undertaken at least four times per year with at least two surveys occurring during mid-summer periods of highest salmon feed discharge rates and at least two surveys occurring periods associated with winter/spring and/or autumn diatom maxima.</p> <p>d. Monitoring intensity of a-c above shall be dependent upon the age of the marine farm, how stable the feed discharge levels have been over the 12 months, and whether or not the marine farm had been compliant with the EQS over the last 2 years (and the nature of any breaches).</p> <p>e. Targeted water column surveys to quantify the localised effect of the marine farm on surrounding water quality, for the purpose of obtaining information regarding marine farm-specific, near-farm mixing properties in order to provide a context for evaluating compliance with the EQS – WQS in condition 44. This shall involve a series of fine-scale surveys in the vicinity of the marine farm (within 1km from the net pens) measuring: salinity, clarity, temperature, chlorophyll a, turbidity, dissolved oxygen (DO), nutrient concentrations (NH₄-N, NO₃-N, NO₂-N, DRP, Si, TN and TP) phytoplankton composition and biomass along transects that move away from the marine farm and span</p>	<p>a. The level of sampling, analyses, sampling methods, locations and timing have been provided in table 2 and throughout part 3 of the MEMAMP.</p> <p>b. The copper and zinc monitoring has been outlined in the MEMAMP. A grab sample is to be taken between January and March 2019. The decision tree from the BMP will be used (Figure 7 BMP Guidelines).</p> <p>c. Routine and full suite monitoring of the water column are being used to determine compliance with WQS. The required parameters have been outlined for monitoring in the MEMAMP. Monitoring has been outlined for February, March, July and August.</p> <p>d. The monitoring intensity of the marine farm is reflective of the age of the marine farms. The MEMAMP states: <i>"In addition to Type 2 monitoring, a spatial footprint mapping exercise will be carried out (Type 3 monitoring) to reassess the appropriateness of the zone boundaries, and the shape of the depositional footprint at these farms. Consent conditions require that this is carried out after three years of farm operation at the initial feed level (Conditions 39a, 65i/ 66i, 66j/67j, also see Keeley & Taylor 2011)2. The KOP farm has not been operating within 15% of its maximum annual feed discharge level, therefore Type 3 monitoring will not be carried out at this farm."</i></p> <p>e. Part 4 of the MEMAMP discusses water column monitoring. Fine scale monitoring is to be used to fulfil part e. All of the required parameters have been outlined in the MEMAMP for monitoring. Surveys are planned for August and March.</p> <p>f. Reference stations are being used for monitoring of farm effects in neighbouring bays. The reference stations used in the 2018/2019 monitoring will continue to be used. An additional reference station is to be established during the 2018/19 monitoring in a comparable flow to the Kopāua farm.</p> <p>g. The MEMAMP outlines that there are two potential impact sites at the Kopāua marine farm. Reference sites for these impact sites are also outlined. The MEMAMP includes that reef monitoring will be carried out in November/December 2018.</p> <p>h. Permanent transects have been developed at all</p>	

<p>potential nutrient gradients. The surveys shall be undertaken at least twice per year and continued for at least two years after the marine farm has reached stable maximum feed discharge levels and not future increases are proposed.</p> <p>f. Annual quantitative and qualitative monitoring for potential effects at soft sediment sites in neighbouring bays near to, and removed from, the marine farm, in order to ensure that the marine farm is not resulting in seabed enrichment in areas of natural deposition in neighbouring bays. The sites shall be chosen based on potential exposure to increased biodeposition including any areas in those bays identified by the Tangata Whenua Panel (refer to condition 77) as customary kaimoana gathering areas. This monitoring shall be undertaken at a selection of representative soft sediment sites, which may also double as reference sites for near-farm monitoring (see condition 66a), and shall be continued until at least 5 years after the marine farm has reached a stable level of feed discharge and no future increases are proposed. [The same monitoring may be undertaken for a group of marine farms, as it will assess the cumulative effects from all marine farms in that group.]</p> <p>g. Annual quantitative and qualitative monitoring of habitats that support notable biological features under or within 1km of the net pens ('reef' monitoring), including any area of blue cod habitat or any areas identified by the Tangata Whenua Panel (refer to condition 77) as customary kaimoana gathering area, in order to ensure that the operation of the marine farm is not causing adverse effects as a result of biodeposition. Monitoring shall also include comparable habitats at appropriate reference sites. This monitoring shall be continued until at least 5 years after the marine farm has reached a stable level of feed discharge and no future increases are proposed. For the purposes of this condition 'notable biological features' shall include but not be limited to areas of significant reef, tubeworm mounds and hydroid colonies. [This condition will only apply to those marine farms with notable biological features within 1km of the marine farm.]</p> <p>h. Annual quantitative and qualitative monitoring of ephemeral macroalgae (e.g. <i>Ulva</i> sp.), benthic algal films and perennial algae (e.g. <i>Hormosira banksii</i>) percentage cover and the abundance of grazing invertebrates (e.g. cats' eyes snails (<i>Turbo smaragdus</i>) and Kina (<i>Evechinus chloroticus</i>) on intertidal and shallow subtidal rock reefs, including any reefs identified by the Tangata Whenua Group (refer to condition 77) as customary kaimoana gathering area in order to ensure that the operation of the marine farm does not cause an obvious or noxious build-up of macroalgal (e.g. sea lettuce) biomass. Monitoring shall be undertaken two times during one year at the following locations:</p> <ul style="list-style-type: none"> i. At or near locations expected to have the greatest potential for marine farm-related cumulative enrichment effects (either within 1km of the marine farm or in neighbouring bays); ii. At or near locations further away from the marine farm or groups of marine farms in locations that are expected to have less marine farm-related cumulative enrichment effects. <p>This monitoring shall be continued until at least 5 years after the marine farm has reached a stable level of feed discharge and no future increases are proposed.</p> <p>i. After 3 years of operation at the Initial Feed Discharge level in Table 1, a repeat of the baseline monitoring undertaken in accordance with condition 63a, in order to review the dimensions and areas of the EQS compliance Zones in Table 2, condition 39, and the location of the compliance monitoring</p>	<p>farms to characterise communities fulfilling the requirements of this condition.</p> <p>i. Type 3 Monitoring is to be carried out during the 2018/2019 monitoring period to review the zone boundaries of the 3 consents. It is noted that as Kopāua has not been operating within 15% of the maximum annual feed discharge level, Type 3 monitoring will not occur for this farm however consideration of the zone boundary will be assessed. The MEMAMP notes that Type 3 sampling is to be undertaken instead of the repeated baseline study as the baseline study is not sufficient to review the dimensions and areas of the EQS compliance monitoring stations and the shape of the depositional footprint. Therefore, a more comprehensive survey design has been employed.</p> <p>j. the one off underwater light monitoring of the biology of the water column was carried out on 18 October 2017. The survey concludes that the physical and biological effects of underwater lighting on the marine environment are small and localised.</p> <p>k. The lighting effects are monitored by NZKS staff and reporting will be every two years. It is noted that this will be the first year that staff observations will be collected.</p> <p>l. N/A</p> <p>m. N/A</p> <p>The MEM-AMP meets the requirements of this condition of consent.</p>	
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<p>Stations specified in Table 3, condition 40. This monitoring may incorporate the compliance monitoring for the EQS – Seabed Deposition in terms of condition 66a for that year.</p> <p>j. One-off monitoring of the effects of submerged artificial lighting on the biology of the water column (e.g. zooplankton composition and abundance), when the submerged artificial lights are fully operation, to compare with the assessment of effect of submerged artificial lighting undertaken at Clay Point marine farm, in order to confirm that the effects are similar. (To apply to any farm which is exposed to lower current speeds than Clay Point where the assessment of effect of submerged artificial lighting for the application was undertaken.)</p> <p>k. Quarterly monitoring over 2 years by scientifically advised marine farm staff of the effects from submerged artificial lighting on changes in night-time feeding activity by fish, seabirds and marine mammals in and around the illuminated net pens, in order to confirm that the magnitude of these effects are generally as expected.</p> <p>l. Monitoring of feed loss at a range of appropriate times across a full production cycle, once the marine farm has reached a stable level of feed discharge and no future increases are proposed, to establish feed loss levels and their variability through time.</p> <p>m. Seasonal monitoring of the size and composition of aggregations of pelagic and demersal fish beneath the marine farm at a range of appropriate times across one year, once the marine farm has reached a stable level of feed discharge and no future increases are proposed.</p>		
<p>67. The Annual Report shall include, but not be limited to, the following:</p> <p>a. A statement as to the tonnage of feed and nitrogen discharged each month over the previous year.</p> <p>b. The results of all monitoring undertaken in the previous year.</p> <p>c. A comprehensive analysis of the results of that monitoring, including:</p> <p>i. whether the monitoring information obtained is fit for the purpose of determining the effects from the operation of the marine farm and for determining whether compliance with the EQS specified in conditions 38-44 is achieved.</p> <p>ii. whether there are any evident trends of effects from the operation of the marine farm.</p> <p>EQS - Deposition on the Seabed</p> <p>d. An assessment and conclusions as to whether compliance with the EQS specified in condition 48 has, or has not, been achieved for the previous year.</p> <p>e. Recommendations as to any amendments to management practices (including any increases or decreases on the tonnage of feed to be discharged) at the marine farm in order to ensure that the EQS in condition 40 are complied with.</p> <p>EQS – Copper and Zinc Levels</p> <p>f. An assessment and conclusions as to whether compliance with the ANZECC (2000) ISQG-Low criteria for copper and zinc set out in condition 41 has, or has not, been achieved for the previous year.</p>	<p>a. The report states the tonnage of feed used over the previous 12 month period.</p> <p>b. The results of the monitoring carried out in the 2017/2018 monitoring period are discussed in the report.</p> <p>c. The report analysed the monitoring results and determined these against the EQS. The report outlined the summary of findings. The results were compared to the baseline monitoring results.</p> <p>d. The report concludes that compliance with the EQS has been achieved.</p> <p>e. No recommendations regarding management practices or feed discharge rates were made.</p> <p>f. The copper and zinc concentrations were compared against the ANZECC ISQG-low criteria to show that they are compliant with these criteria.</p> <p>g. No recommendations are required.</p> <p>h. An assessment of the compliance with the WQS has been provided in the results section of the report.</p> <p>i. no recommendations to the management practices of the site were made as there were no compliance issues with the WQS.</p> <p>j. not applicable.</p> <p>k. The report covers the near farm and wider scale</p>	

<p>g. Where the ANZECC (2000) ISQG-Low criteria for copper and zinc have been exceeded, recommendation as to any amendments to monitoring and management actions at the marine farm, in accordance with condition 42.</p> <p>EQS – Water Column</p> <p>h. An assessment and conclusions as to whether the WQS specified in condition 44 have, or have not, been complied with, for the previous year.</p> <p>i. Recommendations as to any amendments to management practices (including any increases or decreases in the tonnage of feed to be discharged) at the marine farm, in order to ensure that the WQS specified in condition 44 continue to be complied with. In the case of non-compliance with the WQS, recommendations as to monitoring, analysis and/or management responses in accordance with condition 44d.</p> <p>Review of the Dimensions of the EQS Compliance Zones in Table 2</p> <p>j. Following 3 years of operation at the Initial Feed Discharge level in Table 1, a review of the results of the monitoring undertaken in terms of condition 66i. This shall include a comparison of those monitoring results with the dimensions and areas of the EQS compliance Zones specified in Table 2, condition 39. In accordance with condition 39b, the Annual Report shall specify any recommendations for amendments to the dimensions and areas of the EQS compliance Zones in Table 2, condition 39, and to the location of the representative compliance monitoring Stations specified in table 3, condition 40, for the subsequent years;</p> <p>Determination of WQS</p> <p>k. The Annual report will include the relevant reviews of the near farm and wider-scale water column and ecosystem monitoring results and of WQS and associated hierarchy of responses to breaches of the WQS as specified in condition 44. Prior to specifying amendments to the WQS and responses, the consent holder shall consult with the Council and the Department of Conservation.</p> <p>Other Recommendations</p> <p>l. Where identified as a result of the monitoring, any recommendations for other actions to be undertaken to address potential effects from the operation of the marine farm set out in condition 54 and to achieve to Purposes in condition 55, including to avoid, remedy or mitigate any significant adverse effects from the operation of the marine farm.</p> <p>m. Any other recommendation for amendments to the monitoring programme for the following year.</p>	<p>water column and ecosystem monitoring and has commented on the compliance with the WQS for these sites. The report states that the WQS are being met and therefore no management response is required.</p> <p>l. Recommendations have been made; no recommended actions are required to address potential effects from the operation of the marine farm.</p> <p>m. Recommendations have been made in regards to further monitoring including the following: An additional reference site is added to the monitoring of the soft sediment habitats. As part of the third year review it is recommended that comprehensive time series analysis is completed to fulfil the WQS under condition 43.</p>	
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Please Note:

Pursuant to section 36 of the Resource Management Act 1991 and the Marlborough District Council's schedule of fees, the consent holder shall be responsible for all costs associated with the monitoring of this consent in accordance with the schedule of fees.

Where non-compliance is noted on an inspection visit, remedial action is identified and advised to the consent holder in writing. A follow-up visit may confirm that appropriate remedial action has been taken. No charge is made for this visit if the consent holder is at this stage complying with the consent conditions. If the conditions of the consent are not being complied with the consent holder is charged and subsequent visits maybe required.



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New Zealand King Salmon Ltd – 2017/2018 Compliance Report for – Coastal Permit (U150081) – Te Pangu Bay Marine Farm

Assessment of compliance with consent U150081

This report sets out the compliance status for the Te Pangu Bay Marine Farm Coastal Permit. The information in this report is based on the Environmental Monitoring Report provided by Cawthron.

Compliance Status has been indicated using a monitoring traffic light system where **green** indicates compliance; **yellow** indicates technical non-compliance; **orange** indicates that a breach of effects or best practice consent conditions has occurred with minor actual or potential adverse environmental effects, and **red** indicates significant non-compliance where a persistent or significant breach has occurred causing adverse environmental effects.

Report prepared by: Claire Frooms Environmental Protection Officer

Date: 6 November 2018

Overall compliance status: Minor Non-compliance

Please note that the following consent conditions are representative only, they do not include the complete list of conditions of consent.

Condition	Comment	Compliance Status
<p>3. The consent holder shall ensure that, unless stipulated by another condition of this consent, all monitoring, reporting, timing of surveys, survey methodologies, data collection, data analysis and timing of reporting complies with the Best Management Practice guidelines for salmon farms in the Marlborough Sounds: Benthic environmental quality standards and monitoring protocol (Best Management Practice Guidelines: Benthic, as displayed on the Marlborough District Council website). All reports received from the consent holder shall be public record.</p> <p>Note: In the event of a conflict between the above documents and a condition of this consent, the condition shall take precedence, unless specified otherwise in the condition.</p>	<p>The BMP states that annual monitoring is to be conducted between the middle of January and the middle of March in each calendar year. The monitoring at Te Pangu Bay was undertaken on 23 January 2018.</p> <p>The EQS for the OLE has been modified for a closer sampling distance of 300m rather than 600m as per the BMP – both are detailed in Table 1 of the annual report. This is to be in accordance with the consent condition and hence compliant with this condition which confirms this to be the best option in the event of a conflict.</p> <p>Data collection and analysis is in accordance with the BMP.</p>	
<p>5. The consent holder shall ensure that any monitoring report (required through the Marine and Environmental Monitoring and Adaptive Management Plan (MEMAMP) prepared under Conditions 31 and 36 below) shall be submitted to Council no later than 1 May following sampling in that same year.</p>	<p>The Cawthron report was received by Council on 1 May 2018.</p>	
<p>27. Discharge</p> <p>The maximum annual tonnage of feed that may be discharged into the coastal marine area from the marine farm shall not exceed 5500 metric tonnes when the farm is located in the 'inshore net pen area' and shall not exceed 6000 tonnes when the farm is located in the 'seaward net pen area'.</p>	<p>A total of 5,216 tonnes of feed was discharged in 2017, the highest level of annual feed discharge in the last 8 years but within the consent limit.</p>	
<p>28. The consent holder shall establish and maintain a feed log detailing monthly volumes of feed discharge and the location of the discharge. This shall be provided to the Compliance Manager, Marlborough District Council, on request.</p>	<p>NZ King Salmon supplied data on feed inputs to Cawthron in order to complete their report.</p>	

<p>29. The maximum greywater discharge shall not exceed 1.0 cubic metre per day. The consent holder shall ensure that an appropriate system is operated at the marine farm to quantify the volume of greywater discharged. It will be appropriate to measure the volume discharged by proxy (i.e. by measuring the amount of fresh potable water which is brought onto the barge and assuming it is all discharged via the greywater system). The results shall be provided to the Compliance Manager, Marlborough District Council, on request.</p>	<p>Email sent by OPBL on 28 September 2018 providing information that approximately 684litres of water per day are provided to the farm. Well under the 1 cubic metre per day limit provided for by condition 29.</p>	
<p>30. Water Quality</p> <p>The marine farm shall be operated at all times in such a way as to achieve the following water quality objectives in the water column:</p> <p>a) To not cause a change in the typical seasonal patterns of phytoplankton community structure (i.e. diatoms vs dinoflagellates) and with no increased frequency of harmful algal blooms (HAB's);</p> <p>b) To not cause reduction in dissolved oxygen concentrations to levels that are potentially harmful to marine biota;</p> <p>c) To not cause elevation of nutrient concentrations outside the confines of established natural variation for the location and time of year, beyond 250 metres from the edge of the net pens;</p> <p>d) To not cause a statistically significant shift, beyond that which is likely to occur naturally, from an oligotrophic/mesotrophic state towards a eutrophic state;</p> <p>e) To not cause an obvious or noxious build-up of macroalgae (e.g. sea lettuce) biomass.</p>	<p>a) The report states that this objective cannot be fully assessed with the limited time-series of farm-related water column data available to date. It states that it will be assessed as part of a review when appropriate time scales of data are available.</p> <p>b) Minimum dissolved oxygen saturations at the net pen station were all >70% every month during the testing period. (Within the Water Quality Standards).</p> <p>At NZKS19 and NZKS21 dissolved oxygen saturations fell below the second step in February and April. In April the net pen was not sampled. The report notes that when these occurred there were lower dissolved oxygen concentrations observed across all of the Tory Channel sampling stations and it states that they were most likely due to influxes of deep oceanic water from upwelling events. Therefore it cannot be shown that the marine farm has caused these reductions.</p> <p>c) The report notes that sample results demonstrated moderately enriched conditions at the 300NE station and the Embayment station. The report also notes however that farm-related enrichment is unlikely to be driving the changes. It recommends that monitoring should be continued and if the scores continue to increase additional analyses should be undertaken.</p> <p>d) The report states that this objective cannot be fully assessed with the limited time-series of farm-related water column data available to date. It states that it will be assessed as part of a review when appropriate time scales of data are available.</p> <p>e) The reef monitoring report states that macroalgae were consistently present at both reference and potential impact sites, as in previous years. It states that the most obvious overall change was in the abundance of macroalgae at the TP sites but a decline in the Tory Channel sites. It also states however that these changes in macroalgal cover appear to be natural fluctuations in abundances, rather than due to farm-related effects. No reasoning for this statement is provided.</p>	
<p>31. A MEMAMP is to be provided to the Compliance Manager, Marlborough District Council, not later than 15 December each year for the term of the consent and shall be sufficient to provide reliable data on water column effects. The plan is to be prepared and certified by an independent, suitably qualified, and suitably experienced water</p>	<p>A MEMAMP was provided to Council on 15 December 2017.</p> <p>a) The MEMAMP identifies the water column monitoring stations in Figure 3, within section</p>	

<p>quality scientist. That plan is to identify:</p> <p>a) The water column monitoring stations;</p> <p>b) The methods (including the processes to be followed) to be used in assessing water quality;</p> <p>c) The environmental parameters to be monitored; and</p> <p>d) The initial water quality standards (WQS) shall be as follows:</p> <p>i) Concentrations of Chlorophyll-a shall not exceed 3.5mg per m-3.</p> <p>ii) Concentrations of Total Nitrogen shall not exceed 300mg per m-3.</p> <p>iii) Concentrations of dissolved oxygen shall not decline below 70% saturation within 250 metres of the edge of the net pens and 90% saturation beyond 250 metres from the edge of the net pens.</p> <p>Note: On the third anniversary of granting this consent, the WQS will be comprehensively reviewed by an independent, suitably qualified, and suitably experienced water quality scientist.</p> <p>The Marlborough District Council has the ability to review the consent conditions pursuant to section 128 once it has received the plan. It may exercise that power because (among other reasons) it considers the plan inadequate or it considers that a different outcome is desirable.</p>	<p>4.2.</p> <p>b) The MEMAMP identifies the sampling methods to be used in section 4.2.</p> <p>c) The report outlines the parameters to be monitored in Table 2.</p> <p>d) The initial WQS are outlined in Appendix 5, in Table A5.1.</p> <p>Note: The WQS will need to be comprehensively reviewed on 26 January 2019 (on the third anniversary of the granting of the consent).</p>	
<p>32. In the MEMAMP a hierarchy of responses to potential exceedances of the WQS shall be specified, including:</p> <p>a) Notification to the Compliance Manager, Marlborough District Council, within 2 days of the identification of an exceedance of a WQS standard;</p> <p>b) A first level response requiring further monitoring and/or analysis to determine whether the operation of the marine farm is causing the relevant WQS not to be achieved. In that respect:</p> <p>i) A preliminary report (prepared by a suitably qualified and experience marine scientist) shall be provide to the Compliance Manager, Marlborough District Council, no later than 20 working days from the date when the consent holder is given notice of the exceedance;</p> <p>ii) The preliminary report must, giving sound scientific reasons, state which of the following actions will occur:</p> <ul style="list-style-type: none"> • Further monitoring and a further report within a defined timeframe; • No further action; • Where the farm is shown to be the cause of the exceedance, a second level response; <p>c) A second level response requiring a plan of action as soon as practicable, with clear timeframes to reduce effects on the water column and achieve full compliance with the WQS, through reduced stocking on the marine farm following the next harvest of salmon on the marine farm.</p>	<p>The MEMAMP identifies a hierarchy of responses to potential exceedances of the WQS in Appendix 5, in Table A5.1. The hierarchy is different to the details outlined within condition 32.</p> <p>a) The MEMAMP states that if a breach of the WQS occurs in three consecutive months (from the same monitoring station, or different monitoring stations within the same sound), there is an amber alert for compliance and this must be reported to MDC within 2 workings days. Condition 32a of the resource consent requires notification to MDC within 2 days of the identification of an exceedance of a WQS standard, not after three consecutive months of such results, hence this condition is considered technically non-compliant.</p> <p>b)</p> <p>i) The MEMAMP states a review of existing data will take place and be provided to MDC within 20 days of any breach. It does not specify who will review this data.</p> <p>ii) The MEMAMP does not provide detail of this requirement.</p> <p>c) The MEMAMP states that the second level response requires a plan of action as soon as practicable to achieve full compliance with clear timeframes. This includes reduced stocking to achieve compliance.</p>	

<p>33. Benthic Standards</p> <p>The marine farm shall be operated at all times in such a way as to achieve the following average Benthic Quality Standards (BQS) in the seabed for each monitoring station:</p> <p>a) The Enrichment Stage (ES) score below the net pens, i.e., the Zone of Maximal Effect (ZME), measured in accordance with the Best Management Practice Guidelines: Benthic, as displayed on the Marlborough District Council website, shall not exceed 5.0.</p> <p>b) That no more than one replicate core with no taxa is permitted in the ZME.</p> <p>C) That no obvious spontaneous out-gassing of hydrogen sulphide and methane is permitted in the ZME.</p> <p>D) That the coverage of the Beggiatoa bacteria may be not greater than localised and patchy in distribution in the ZME.</p> <p>E) The ES score at the Outer Limit of Effect (OLE), measured in accordance with the Best Management Practice Guidelines: Benthic, as displayed on the Marlborough District Council website, shall be less than 3.0 at all times.</p> <p>Note: The Benthic Quality Standards (BQS) are referred to as Environmental Quality Standards (EQS) in the Best Management Practice Guidelines: Benthic. The change of terminology reflects the scope of the Best Management Practice Guidelines: Benthic.</p>	<p>a) The ES score at Pen 1 was 5.0; Pen 2 was 4.6 and Pen 3 was 4.7. (Compliant)</p> <p>b) All replicate cores had taxa. (Compliant)</p> <p>c) The report outlines that no out-gassing was detected, Appendix 4. (Compliant)</p> <p>d) The report notes that the Beggiatoa-like bacterial coverage under the pens exceeds the BQS as there were places where it was patchy-major and mat forming. It notes however that the macrofaunal communities beneath the pen still had a highly assimilative capacity. NZKS have collected additional footage which will be reviewed in the next monitoring round. (Minor non-compliance).</p> <p>e) The overall ES scores were 3.2 at 300NE and 2.4 at 300NW. That result at 300NE is higher than the permitted level in condition 33(e). The report states the permitted level here is <3.7 as reflected in the BMPs and therefore indicates compliance with BMPs. (Technical non-compliance).</p>	
<p>34. Copper and Zinc levels measured in the ZME shall not exceed the Australian and New Zealand Environment and Conservation Council (ANZECC) (or any revised or replacement New Zealand standard) Interim Sediment Quality Guidelines High Level (ISQG-High) for the total recoverable fraction of these metals. For compliance purposes, the decision tree in the Best Management Practice Guidelines: Benthic shall be followed.</p>	<p>6 of the 9 replicates from beneath the pens exceeded the ISQG-Low (65mg/kg) criterion for copper. 1 sample exceeded ISQG-High with concentrations of 310mg/kg.</p> <p>The dilute-acid extractable fraction (ANZECC 2000) was below the threshold in all replicates, no ecological effects are expected as a result.</p> <p>3 of the 9 zinc concentrations beneath the pens exceeded the ISQG-Low criterion of 200 mg/kg. 1 sample also exceeded the ISQG-High. Localised biological effects from zinc are possible. As the average dilute –acid extractable zinc concentration across all pen samples was below the ISQS-Low criterion the next step in the BMP guideline decision tree is to have at least level 3 monitoring completed in the next monitoring round. The MEMAMP 2018 indicates level 3 sampling will be undertaken. Therefore this condition has been assessed as compliant.</p>	
<p>35. The ZME is to be sampled at the edge of any net pens used in the previous 12 months and the OLE shall not exceed 600 metres from the edge of the net pens in either longshore direction.</p>	<p>The report doesn't outline which pens were used in the previous 12 months and therefore compliance with this condition cannot be assessed. It would be helpful to include this information in future reports so compliance can be assessed.</p>	
<p>36. A MEMAMP is to be provided to the Compliance Manager, Marlborough District Council, no later than 15 December each year for the term of the consent which will measure compliance with the BQS. That plan is to be prepared and certified by an independent, suitably qualified, and suitably experienced marine scientist. That plan will identify:</p>	<p>The MEMAMP was provided to Council on 15 December 2017. It was prepared by Cawthron (report number 3114).</p> <p>a) The sampling locations are identified in</p>	

<p>a) The benthic monitoring stations;</p> <p>b) The timing of the monitoring of the ZME and OLE;</p> <p>c) The environmental parameters to be monitored;</p> <p>d) The monitoring proposed for the identified reef complexes in the vicinity of the site, consistent with previous monitoring of reef habitats in the area, including identifying any long-term and short-term changes in community structure and health;</p> <p>e) A site-specific account of any recommendations or management responses from the previous year; and</p> <p>f) Detailed sampling methods.</p> <p>The MEMAMP is to be consistent with the Best Management Practice Guidelines: Benthic.</p> <p>Note: The Marlborough District Council has the ability to review the consent conditions pursuant to section 128 once it has received the plan. It may exercise that power because (among other reasons) it considers the plan to be inadequate or it considers that a different outcome is desirable.</p>	<p>section 3.2 of the MEMAMP.</p> <p>b) The timing of analysis is outlined in section 3.2.2 of the MEMAMP.</p> <p>c) The environmental parameters to be monitored are outlined in Table 5 (copper and zinc) of the MEMAMP.</p> <p>d) The sampling design detailed in section 5 of the MEMAMP is based on the previous monitoring programme; it is undertaken jointly with the neighbouring farm. The long and short term changes are identified.</p> <p>e) The sampling design in section 5.1 takes into account recommendations from the previous monitoring.</p> <p>f) The sampling methods are identified in section 5.2 of the MEMAMP.</p>	
<p>37. For compliance purposes, the decision tree(s) in Best Management Practice Guidelines: Benthic shall be followed.</p>	<p>The decision tree in Best Management Practice Guidelines: Benthic indicates that type 2 monitoring shall be required.</p> <p>Monitoring takes places on an annual basis. The monitoring stations and variables are in accordance with high flow type 2 monitoring requirements.</p>	

Please Note:

Pursuant to section 36 of the Resource Management Act 1991 and the Marlborough District Council's schedule of fees, the consent holder shall be responsible for all costs associated with the monitoring of this consent in accordance with the schedule of fees.

Where non-compliance is noted on an inspection visit, remedial action is identified and advised to the consent holder in writing. A follow-up visit may confirm that appropriate remedial action has been taken. No charge is made for this visit if the consent holder is at this stage complying with the consent conditions. If the conditions of the consent are not being complied with the consent holder is charged and subsequent visits maybe required.



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