

FORM 1 – REQUEST FOR INTERPRETATION OR VARIANCE

1.1 Name of CAB	1.2 Date of Submission	1.3 CAB Contact Person	1.4 Email of CAB Contact Person
SCS Global Services	26 January 2014	Sabine Daume	SDaume@scsglobalservices.com

<p>1.5 ASC Document Reference</p> <p>ASC Salmon Standard V1.0 2.1 Benthic biodiversity and benthic effects 2.2 Water quality in and near the site of operation</p>
<p>1.6 Background (Provide full explanation of the issue)</p> <p>Comprehensive and costly regional monitoring programs are already established for the Tasmanian salmon farming industry to measure benthic biodiversity, benthic effects and water quality.</p> <p>This criterion's rationale provided by ASC is closely aligned with the Tasmanian salmon farming industry's approach. In Tasmania there exists a collaborative approach in understanding the function of the marine system in which several companies including Tassal farm and there are governing processes that assist the industry to do this. The understanding of the marine ecosystem is important as it shows the functionality of the system – rather than using actual methods to take a snapshot at that point in time</p> <p>Tassal requested to submit this variance in order to be able to retain environmental monitoring under current regulatory processes as it is built on many years of credible, robust research, addressing issues discussed in the ASC rationale for these criterion.</p> <p>2.1.1 Redox potential or³ sulphide levels in sediment outside of the Allowable Zone of Effect (AZE),⁴ following the sampling methodology outlined in Appendix I-1 <i>Redox potential > 0 millivolts (mV) OR Sulphide ≤ 1,500 microMoles / l</i></p> <p>Redox is a requirement under Schedule 3B for new leases but thereafter is not monitored unless at the discretion of the Marine Farming Branch (MFB) of the Department of Primary Industry, Parks, Water and Environment (DPIPWE) or lease holder. The MFB can at any stage request the lease holder to sample for redox or sulphides. Historical data suggests that no marine farming lease has had a redox potential below zero or sulphides above 1,500 microMoles. To address this criteria, Tassal propose to continue using the researched and approved visual assessment methodology under Schedule 3V of the Marine Farming Licence to replace chemical proxies such as redox and sulphide, which presents itself as spontaneous outgassing of sediments without or upon disturbance. Tassal will report on visual surveys if variance request is granted.</p> <p>2.1.2 Faunal index score indicating good⁵ to high ecological quality in sediment outside the AZE, following the sampling methodology outlined in Appendix I-1 <i>AZTI Marine Biotic Index (AMBI⁶) score ≤ 3.3, or Shannon-Wiener Index score > 3, or Benthic Quality Index (BQI) score ≥ 15, or Infaunal Trophic Index (ITI) score ≥ 25</i></p> <p>The indices referred to by the ASC are fairly commonplace in benthic faunal evaluations, and are a core component of sediment quality assessments in Europe and the Americas; however Australia and Tasmania specifically are not a complete fit. The similarities and differences in the local Tasmanian ecology compared with overseas systems, are well recognised (Macleod <i>et al.</i> 2004 & 2007 and Edgar 2010), as are the differences between Northern and Southern Hemisphere systems (Macleod <i>et al.</i> 2008, Keeley <i>et al.</i></p>

2012). As a result it has been highlighted that many of the biotic indices metrics derived in northern context do not readily translate to Australian context. Many of the recommended faunal indices are species specific but not all. We may need to consider developing or refining these indices for Tasmanian specific conditions like Keeley *et al.* (2012) did for New Zealand. Macquarie Harbour is an important example, it is naturally depauperate (Talman *et al.* 1996 and Edgar *et al.* 2009) and as such applying any of the faunal indices required in the ASC standard would give misleading scores. Currently benthic biodiversity is analysed using Bray-Curtis Similarity Index and multidimensional scaling (MDS).

2.1.3 Number of macrofaunal taxa in the sediment within the AZE, following the sampling methodology outlined in Appendix I-1

≥ 2 highly abundant⁷ taxa that are not pollution indicator species

Macquarie Harbour is a naturally depauperate system (Talman *et al.* 1996) and therefore farming activity here is unlikely to follow the patterns of species diversity and numbers observed in other farming areas. Tassal propose the possibility of ASC recognising that there is enough infauna data from previous studies to support our move to assess benthic impacts using visual means rather than faunal indices; however, we are required by law to look at benthic infauna under Schedule 3B of the Marine Farming Licence.

2.1.4 Definition of a site-specific AZE based on a robust and credible⁸ modelling system

Yes, within three years of the publication⁹ of the ASC Salmon Standard

Our AZE is 35 metres and this distance was defined by the regulators (Marine Farming Branch) based on multiple lines of evidence from the international (Brown *et al.* 1987; Gowen *et al.* 1988; Cromey *et al.* (1998); Hargrave *et al.* 1993; Cromey *et al.* 2002) and local research (Macleod 2000; Crawford 2002; Macleod *et al.* 2004). This 35 m AZE regulation has been in place for over 15 years and monitoring since then by research bodies and farms (as a part of the licence conditions) has provided the government with evidence that a 35 m AZE is a suitable distance for this particular farming environment

2.2.3 For jurisdictions that have national or regional coastal water quality targets¹⁷, demonstration through third-party analysis that the farm is in an area recently¹⁸ classified as having “good” or “very good” water quality¹⁹

Yes²⁰

Macquarie Harbour

The Tasmanian Salmon farming industry have trigger levels for ammonia, dissolved oxygen and nitrate in Macquarie Harbour. This classification system is government-mandated within Tassal’s jurisdiction. These triggers were derived from the National Water Quality Management Strategy (NWQS) endorsed by the Australian and New Zealand Environment and Conservation Council (ANZECC). Tassal propose this be compared with the EU Water Quality Framework Directive. Water quality triggers have been set using monthly monitoring data and in addition to these, the Environmental Protection Agency (EPA) will set Water Quality Objectives (WQO) in Macquarie Harbour which will be mandatory.

Phosphorus is not considered a limiting nutrient, and for this reason it is not included as one of the triggers. A limiting nutrient is generally considered to be a nutrient which plays a key role in the productivity of the environment, and as such its concentration will influence the ecology of the system. For instance, nitrogen is generally considered to be the nutrient that has the greatest influence on primary productivity and algal growth in marine systems, such that where nitrogen availability is low, plants/microalgae are held back (limited) and in contrast these plants will proliferate when nitrogen is added. For this reason Tassal focus on nitrogen when looking at water quality impacts.

Southeast Region of Tasmania (other Tassal farm sites)

For the Southeast farms there is a nitrogen cap set in place and water quality issues are addressed in the

SE Broadscale environmental monitoring program (BEMP) following the same rationale as the Macquarie Harbour program. Benthic monitoring is conducted as outlines above.

2.2.4 For jurisdictions without national or regional coastal water quality targets, evidence of weekly monitoring of nitrogen and phosphorous²¹ levels on farm and at a reference site, following methodology in Appendix I-5

If the method for addressing 2.2.3 are approved with this variance request, this criterion would be redundant.

References

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- Cromey, C. J., Nickell, T. D., and Black, K. D. (2002) DEPOMOD-modelling the deposition and biological effects of waste solids from marine cage farms. *Aquaculture* 214, 211-239.
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- Macleod, C. K., Moltschaniwskyj, N. A., and Crawford, C. M. (2008) Ecological and functional changes associated with long-term recovery from organic enrichment. *Marine Ecology Progress Series* 365: 17–24.
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1.7 Recommended action/decision

SCS recommends that ASC accepts Tassal's current, well developed and scientifically credible water quality and benthic monitoring methodologies. These have long been employed for the whole region and are under stringent government regulations that are appropriate to the local conditions.

II ASC Determination

2.1 Status	2.2 Date of the ASC Determination
X <input type="checkbox"/> Closed	11-02-2014

2.3 ASC Determination on Variance Request
The ASC approves this request for the Tassal Macquarie Harbor Farms: 1) Middle Harbor, 2) Gordon and 3) Franklin.
2.4 ASC Interpretation
<p>Recognising that in the salmon standard under Criteria 2.1 'Initial Auditing Guidance' 2nd bullet point:</p> <p>"Some degree of flexibility with regard to sampling location and methodology shall be considered acceptable during audits as long as the basic rigour of the standard isn't jeopardised"</p> <p>The ASC approves this request to accept the regional monitoring programs established for the Tasmanian salmon industry to measure benthic biodiversity, benthic effects and water quality. Within the audit report the CAB shall explain how the overall intent and rigour of the ASC Salmon Standard is being met when using these alternative approaches. This explanation shall allow a stakeholder to be able to follow the logic and resulting determination of the CAB.</p>