NSW EPA

Your reference:
Our reference: DOC14/67415; EF13/9354
Contact: Steve Clair (02) 4908 6850

Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Chris Ritchie

Dear Mr Ritchie

PINDIMAR ABALONE FARM PROJECT (MP10_0006)
RECOMMENDED CONDITIONS OF APPROVAL

Reference is made to your letter to the Environment Protection Authority (EPA), dated 19 March 2014, requesting recommended conditions of approval on the proposed land based abalone farm detailed in the report titled "*Pindimar Abalone Farm: Environmental Assessment Report*" (EA), dated February 2014.

Reference is also made to the EPA's letter to the Department of Planning and Infrastructure dated 19 April 2013 providing comments on the adequacy of the draft EA.

The EPA notes the proposal involves the following:

- Site establishment construction works staged over approximately 3 years;
- Production of approximately 60 t/a of live Blacklip Abalone (*Haliotis rubra*) in land based tanks;
- Intake and use of approximately 50 ML of marine water sourced from Port Stephens passing through the system daily when at full production; and
- Treatment (including swirl separators, protein skimmers, settlement ponds and UV disinfection where necessary) of post aquaculture use water prior to discharge back into Port Stephens.

The EPA has completed a review of the exhibited EA and advises that the proponent has not addressed concerns raised by the EPA in the adequacy review regarding potential impacts to receiving waters. Accordingly the EPA is unable to issue recommended conditions of approval for the proposal at this time.

The EPA's key issues are detailed in the attachment to this letter. In summary, each of the points the EPA raised in our letter of 19 April 2013 are still yet to be adequately addressed.

Please contact Steve Clair on (02) 4908 6850 if you require any further information regarding this matter.

Yours sincerely

13-5-14

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ATTACHMENT

Details of the EPA's key issues of concern are detailed below.

- Water pollution treatment

  At the adequacy stage of the assessment the EPA advised more detail is needed on treatment methods and justification that the assumptions made about the effectiveness of the treatment train are realistic and/or achievable.

  This issue has not been adequately addressed.

  Some indication of potential variation in performance of treatment methods and the implications of this for effluent quality must be given.

  Given the ecological significance of the proposed discharge location and the proximity to sensitive seagrass populations (*Posidonia*), it would have been prudent to assume more conservative estimations of effluent quality at the discharge point.

  If overly optimistic assumptions are made impacts could be considerably greater than predicted. For example, no account of potential variation in effluent quality has been made due to the effects of seasonal variation in factors such as food conversion, treatment efficiency etc. Also the EA suggests biological uptake of nutrients in the ponds is an important nutrient removal mechanism, whereas in practice these systems can become "saturated" after a period of time.

  The EPA recommends that the design of treatment trains be carried out by highly qualified and experienced personnel, and that this is also closely scrutinised by independent review.

- Modelling

  At the adequacy stage of the assessment the EPA advised the proponent needs to justify the input predictions for the modelling.. Given the point above this issue is still to be adequately resolved.

  The assumption of a flat effluent concentration (78 $\mu g\ L^{-1}$ ammonium) takes no account of likely variation in effluent quality. Further, the assumption of no oxidised nitrogen in effluent needs to be justified, as this fraction would significantly increase the effective bio-available nitrogen concentration of effluent

  In addition the EPA disagrees with the conclusions reached that winds in the area do not influence nutrient enriched water being directed towards sensitive seagrass beds (*Posidonia)*. The proponent has assessed the wind data for Williamtown and averaged data, however if weather data from a more appropriate station (e.g. Nelsons Bay) was used and daily wind variation assessed a different conclusion could have been reached. That is, at the Nelson Bay Bureau of Meteorology site winds at 3pm are dominated by NE to SE quarters for the bulk of the year, with the exception of winter. As such, wind will tend to be an important factor in driving effluent plumes over the *Posidonia* beds during daylight hours when biological uptake is greatest. The EPA recommends that a more careful consideration of the effects of wind on effluent dispersion be made before approval is considered.

- Seagrasses

At the adequacy stage of the assessment the EPA advised the most likely adverse affect, if it did occur, would be adverse impacts on nearby seagrass beds caused by localised increased nutrient levels. The contention made in the EA and Dilution Report that the proposed effluent discharge is similar to urban stormwater discharges is incorrect. Rainfall events over urban areas tend to cause brief pulses of stormwater whereas the proposed effluent would be discharged continually. Continuous discharge of effluent greatly increases the potential for impacts on the ecology surrounding the discharge location.

At the adequacy stage of the assessment the EPA advised the EA needs to investigate options of tunnelling / burying the discharge pipe to prevent direct impacts on seagrasses. The EA discounts any impact of shading due to the effluent pipeline. The EPA disagrees with this assessment and in any subsequent provision of conditions the EPA will recommend that a comprehensive survey of seagrass within the shading footprint of the pipeline be undertaken prior to any construction works and at regular 3 monthly intervals after construction.

- Monitoring

At the adequacy stage of the assessment the EPA advised the EA needs to provide further detail on the monitoring program to ensure that nitrogen loads and concentrations in the discharge are within stated limits and that impacts are acceptable. This issue has not been adequately addressed.

The proponent needs to detail a network of monitoring locations within the receiving environment (and at reference sites elsewhere) in order to establish the zones of influence. In developing this monitoring program the proponent needs to give consideration to the use of deployed gels which accumulate pollutants over time (thereby providing a time-integrated measure of pollutant exposure at the site).

Due to the importance of the nearby seagrass beds, monitoring should also be proposed to monitor the health of *Posidonia* beds adjacent to the outfall and compare these beds to reference sites nearby. Parameters measured should include, but not be limited to:

- Morphometrics (biomass, leaf area index, shoot length)
- photosynthetic efficiency (measured by PAM)
- epiphytic growth
- sediment properties (organic matter, nutrients, sulphides)

- Contingency Measures

At the adequacy stage of the assessment the EPA advised the EA should also include details of a contingency / response action plan for unexpected increases in nutrient concentrations around the seagrass in the vicinity of the discharge location. The proponents need to make clear statements about specific remedial actions that will be implemented if the ecological impacts are greater than those predicted in the EA.