ENVIRONMENTAL ASSESSMENT REPORT

Compost facility

1318 Esperance Coast Road, Surveyors Bay
Huon Aquaculture Group Pty Ltd

Board of the Environment Protection Authority
June 2014
### Environmental Assessment Report

<table>
<thead>
<tr>
<th><strong>Proponent</strong></th>
<th>Huon Aquaculture Group Pty Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proposal</strong></td>
<td>Compost facility</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>1318 Esperance Coast Road, Surveyors Bay, with access from O’Hallorans Road</td>
</tr>
<tr>
<td><strong>NELMS no.</strong></td>
<td>PCE 8827</td>
</tr>
<tr>
<td><strong>Permit application no.</strong></td>
<td>DA-155/2013</td>
</tr>
<tr>
<td><strong>Doc1 folder</strong></td>
<td>EN-EM-EV-DE-238482</td>
</tr>
<tr>
<td><strong>Doc1 no.</strong></td>
<td>H270676</td>
</tr>
<tr>
<td><strong>Class of Assessment</strong></td>
<td>2B</td>
</tr>
</tbody>
</table>

### Assessment process milestones

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/12/2012</td>
<td>Notice of Intent submitted</td>
</tr>
<tr>
<td>30/01/2013</td>
<td>DPEMP Guidelines issued</td>
</tr>
<tr>
<td>27/9/2013</td>
<td>Permit application submitted to Council</td>
</tr>
<tr>
<td>7/10/2013</td>
<td>Application/Referral received by Board</td>
</tr>
<tr>
<td>12/12/2013</td>
<td>Revised application received by Board</td>
</tr>
<tr>
<td>14/12/2013</td>
<td>Start of public consultation period</td>
</tr>
<tr>
<td>20/01/2014</td>
<td>End of public consultation period</td>
</tr>
<tr>
<td>18/04/2014</td>
<td>Supplementary information submitted to Board</td>
</tr>
<tr>
<td>Acronyms</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Air Quality EPP</td>
<td>Environment Protection Policy (Air Quality) 2004</td>
</tr>
<tr>
<td>Board</td>
<td>Board of the Environment Protection Authority</td>
</tr>
<tr>
<td>DPEMP</td>
<td>Development Proposal and Environmental Management Plan</td>
</tr>
<tr>
<td>DPIPWE</td>
<td>Department of Primary Industries, Parks, Water and Environment</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental impact assessment</td>
</tr>
<tr>
<td>EMPC Act</td>
<td>Environmental Management and Pollution Control Act 1994</td>
</tr>
<tr>
<td>EMPCs</td>
<td>Environmental management and pollution control system</td>
</tr>
<tr>
<td>EPBC Act</td>
<td>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</td>
</tr>
<tr>
<td>GLC</td>
<td>Ground Level Concentration</td>
</tr>
<tr>
<td>LUPA Act</td>
<td>Land Use Planning and Approvals Act 1993</td>
</tr>
<tr>
<td>PCAB</td>
<td>Policy and Conservation Assessment Branch (Resource Management and Conservation Division, DPIPWE)</td>
</tr>
<tr>
<td>RMPS</td>
<td>Resource management and planning system</td>
</tr>
<tr>
<td>SD</td>
<td>Sustainable development</td>
</tr>
</tbody>
</table>
Report summary

This report provides an environmental assessment of Huon Aquaculture Group Pty Ltd (‘Huon Aquaculture’)s proposed fish waste composting facility.

The proposal involves the development of a level 2 composting operation with a production capacity of up to 2,400 tonnes of finished compost per annum at 1318 Esperance Coast Road, Surveyors Bay 7116, inland from Granny Gibbons Bay, and north of Dover. The material to be composted will consist of fish mortalities from the nearby salmon farming operation at Hideaway Bay combined with wood waste, using aerobic windrow composting techniques.

This report has been prepared based on information provided by the proponent in the Development Proposal and Environmental Management Plan (DPEMP) and DPEMP Supplement. Relevant Government agencies and the public have been consulted and their submissions and comments considered as part of this assessment.

On 7 February 2014, the Board requested that the proponent submit supplementary information to address public, government agency (including DPIPWE) and Council comments on the DPEMP and to meet other information requirements. Satisfactory supplementary information was submitted by the proponent on 18 April 2014.

Further details of the assessment process are presented in Section 1 of this report. Section 2 describes the statutory objectives and principles underpinning the assessment. Details of the proposal are provided in Section 3. Section 4 reviews the need for the proposal and considers the proposal, site and design alternatives. Section 5 summarises the public and agency consultation process and the key issues raised in that process. The detailed evaluation of key issues is in Section 6, and other issues are evaluated in Section 7 and Appendix 1. The report conclusions are contained in Section 8.

Appendix 2 contains details of comments made and issues raised in the consultation process. Appendix 3 contains environmental permit conditions for the proposal. Attachment 2 of the permit conditions contains the table of commitments from the DPEMP.
# Table of Contents

1 Approvals process........................................................................................................... 1  
2 SD objectives and EIA principles...................................................................................... 2  
3 The proposal .................................................................................................................... 3  
4 Need for proposal and alternatives.................................................................................. 10  
5 Public and agency consultation....................................................................................... 13  
6 Evaluation of key issues.................................................................................................... 14  
   6.1 Odour ......................................................................................................................... 14  
   6.2 Stormwater, drainage and leachate management....................................................... 20  
7 Other environmental issues.............................................................................................. 24  
8 Report conclusions........................................................................................................... 25  
9 References....................................................................................................................... 27  
10 Appendices ..................................................................................................................... 28  
   Appendix 1 Assessment of other issues ....................................................................... 29  
   Appendix 2 Summary of public and agency submissions ............................................. 43  
   Appendix 3 Permit Conditions – Environmental........................................................... 47
1 Approvals process

A Notice of Intent in relation to the proposal was received by the Board of the Environment Protection Authority (the Board) on 17 December 2012.

An application for a permit under the Land Use Planning and Approvals Act 1993 (LUPA Act) in relation to the proposal was submitted to Huon Valley Council (Council) on 27 September 2013.

The proposal is defined as a ‘level 2 activity’ under Schedule 2 Subsection (3)(d)(i) of the Environmental Management and Pollution Control Act 1994 (EMPC Act), being:

Resource recovery: the conduct of works for the production of compost or mushroom substrate, being works with a production capacity of 100 tonnes per year or more.

Section 25(1) of the EMPC Act required Council to refer the application to the Board of the Environment Protection Authority (the Board) for assessment under the Act. Council initially referred the application to the Board on 3 October 2013; however further information from the proponent was required by Council prior to finalising the development application. The revised application was submitted to Council on 12 December 2013 and received by the Board on 12 December 2013.

The Board required that additional information to support the proposal be provided in the form of a Development Proposal and Environmental Management Plan (DPEMP) prepared in accordance with guidelines jointly issued by the Board and Council. The final guidelines were issued to the proponent on 30 January 2013.

Several drafts of the DPEMP were submitted to the EPA for comment prior to its finalisation and acceptance on behalf of the Board. A final DPEMP was submitted to Council with the permit application. The DPEMP was released for public inspection for a 28-day period commencing on 14 December 2013. Advertisements were placed in The Saturday Mercury newspaper and on the EPA web site. The DPEMP was also referred at this time to relevant government agencies for comment. 1 public submission was received.

On 7 February 2014, the Board requested that the proponent submit supplementary information to address public, government agency (including DPIPWE) and Council comments on the DPEMP and to meet other information requirements. Satisfactory supplementary information was submitted by the proponent on 18 April 2014. On 14 May 2014 the proponent agreed to an extension of the normal 56-day assessment period so that the assessment report and conditions could be presented to the EPA Board meeting for decision in June, 2014.
2 SD objectives and EIA principles

The proposal must be considered by the Board in the context of the objectives of the Resource Management and Planning System of Tasmania (RMPS), and in the context of the objectives of the Environmental Management and Pollution Control System (EMPCS) (both sets of objectives are specified in Schedule 1 the EMPC Act). The functions of the Board are to administer and enforce the provisions of the Act, and in particular to use its best endeavours to further the RMPS and EMPCS objectives.

The Board must undertake the assessment of the proposal in accordance with the Environmental Impact Assessment Principles defined in Section 74 of the EMPC Act.
3 The proposal

The main characteristics of the proposal are summarised in Table 1. A detailed description of the proposal is provided in Sections 2 and 3 of the DPEMP. Figures 1, 2 and 3 show the site location and site plans.

Table 1: Summary of the proposal's main characteristics

<table>
<thead>
<tr>
<th>Activity</th>
<th>Location and planning context</th>
</tr>
</thead>
<tbody>
<tr>
<td>An aerobic windrow composting facility, composting fish mortalities from the nearby salmon farm at Hideaway Bay with wood waste, with a production capacity of up to 2,400 tonnes of composted material per annum. Final compost product will be transported off site in bulk quantities for bagging and distribution and/or sale.</td>
<td></td>
</tr>
</tbody>
</table>

| Location | 1318 Esperance Coast Road, Surveyors Bay TAS 7116 (Property ID 3057387), near Granny Gibbons Bay, north of Dover (see Figure 1). The composting facility is proposed to be located on specific title references 232794/1, 40855/1 and 237916/1. |
| Land zoning | The property is predominantly zoned Rural C, with a small portion zoned Rural B, under the Esperance Planning Scheme 1989. |
| Land tenure | Private, owned by Huon Pastoral Pty Ltd (Bender family, who also own Huon Aquaculture Group Pty Ltd). |

| Existing site | |
| Land Use | Farmland, predominantly cattle grazing, currently used for fattening cattle and as a run-off block for weaned calves or their mothers. The area of the property to be used for the compost facility was cleared approximately 15 years ago and sown to perennial grasses and clover. A small trial composting operation was set up by the proponents in 2007 to determine feasibility of composting at this location. It was deemed successful by the proponents and this is the area that will be expanded for this proposed activity. |
| Topography | Gently undulating, with the proposed compost facility to be located on an elevated north-east facing slope of a pronounced NW-SE ridge, at an elevation of approximately 150 metres above sea level. Mount Esperance is located directly to the south-west of the compost site. |
| Geology | The dominant parent rocks in the area are Triassic-aged upper-Parremeener Super Group rocks of predominantly freshwater sandstone with subordinate siltstone, mudstone and shale with a minor component of pebbly sandstone. The upper slopes of the property towards Mount Esperance are underlain by Jurassic dolerite which dominates the geology of the higher elevations in the local area. The proposal area also falls within a zone of colluvial deposition, where Quaternary-aged slope deposits of dolerite overlie and mingle with the sedimentary sandstone deposits. This colluvial deposition has resulted in mixed geology and soils within the proposal area, varying from fresh or slightly weathered dolerite boulders to extremely weathered mudstone and shale. |
| Soils | There are 2 main soil groups in the proposal area – gradational soils on dolerite colluvium, and duplex soils on Triassic sediments. The soils have imperfect drainage and where dominated by weathered Triassic sediments, have a subsoil dispersion trend. |
| **Hydrology** | Rainwater falling on the hardstand area will flow via dish drains to a primary leachate collection pond. Water in the leachate ponds will be re-used on compost windrows. A larger secondary leachate pond is proposed to capture excessive rainfall. Cut-off drains will direct uncontaminated stormwater flowing towards the site towards nearby paddocks.  
No sensitive water resources nearby/downhill of the site have been detected. A number of minor un-named tributaries of the Huon River occur in the area but these are unlikely to be perennial streams.  
No groundwater bores were found within 1 kilometre of the site. The nearest bores found indicate a standing water level of approximately 9 metres with a low quality yield. Based on field drilling and information from Mineral Resources Tasmania (MRT)'s database, it is estimated that groundwater is at a depth of greater than 20 metres at the site.  
Figures 2 and 3 show the proposed site layout including drainage plans. |
| **Fauna** | Habitat mapping for the site suggests that a number of listed species (Tasmanian Threatened Species Protection Act 1995 and/or Commonwealth Environment Protection and Biodiversity Conservation Act 1999) may occur in the area, including the Tasmanian Devil (Sarcophilus harrisii), Wedge-tailed Eagle (Aquila audax subsp. fleayi – nearest nests are approximately 4 km from the site), Spotted-tailed Quoll (Dasyurus maculatus), White-bellied Sea Eagle (Haliaeetus leucogaster), Azure Kingfisher (Alcedo azurea subsp. diemenensis), Mount Mangana Stag Beetle (Lissotes menalcas), Forty-spotted Pardalote (Pardalotus quadragintus), and Swift Parrot (Lathamus discolor). None have been detected on site. |
| **Flora** | Remnant Eucalyptus pulchella forest and woodland is located approximately 100-150 metres from the southern boundary of the site. The site has been sown to pasture for cattle grazing. No threatened flora have been detected on site or within 500 metres. A number of Tasmanian Weed Management Act 1999 weeds and priority weed species have been recorded within 5 kilometres of the site; however none have been detected on site. |
| **Local region** | Average annual rainfall for the Dover district is approximately 882 mm with winter experiencing greater rainfall than summer. Rainfall exceeds evaporation during May, June, July and August.  
The relative elevation of the site means the site may be affected by windy conditions from time to time. Day time breezes are predominantly from the west and north-west, however the NW-SE ridge strongly channels surface winds, particularly the sea breeze from the east and south-east that develops in the late morning and persists until early evening (becoming a south-easterly breeze in the vicinity of the proposed compost site). Daytime atmospheric are fairly unstable some 70% of the time meaning that dispersion conditions are good. Night-time breezes also show a dominant west and north-west signature, however the atmosphere is more stable and therefore dispersion conditions are not as favourable. Light katabatic winds also occur from around midnight and disappear by mid-morning. |
| **Surrounding land and uses** | Agricultural activities and domestic smallholdings. |
## Proposed infrastructure

### Major equipment

During construction, an articulated wheel loader, track loader, or excavator, will be the principal machinery on site. A grinder or mulcher may be required during initial stages as felling of trees on site occurs.

For compost production, a Bobcat loader or similar multi-tool machine with quick-hitch connections will be used. A specialised hydraulically-powered auger tool with serrated paddles for turning compost windrows (Brown Bear HDR24C or similar) can be fitted to the bobcat.

Pumps will be required for moving leachate and clean water around the site.

A screen may be required for sorting finished product, and will be leased.

Minor equipment such as a digital thermometer and carbon dioxide meter will be required for windrow monitoring.

### Other infrastructure

The site will consist of a large hardstand area (compacted clay and road base); washdown area (reinforced concrete pad), drains and leachate collection ponds (compacted clay), and access roads (compacted road base and gravel). The production area will be approximately 1.6 hectares, with around 1 hectare of this windrow area and the remainder leachate collection dams, washdown area etc.

## Inputs

### Compost feedstocks

Fish morts are taken from pens each day and will be transported to site on the same day in sealed bins. A contingency exists at Hideaway Bay to store morts in refrigerated storage until able to be taken to site the following day.

Quantities of fish morts taken to the compost facility are expected to vary seasonally, from 1 cubic metre of morts per day in winter and spring (May through to November), up to 7 cubic metres of morts per day in peak summer mortality periods (February, March).

High carbon:nitrogen inputs may include green waste, straw or spoiled hay, leaf litter, sawdust, woodchips, paper pulp. Sawdust will be sourced from sawmills in the Dover region. Some wood material may come from clearing of the property.

### Water

Water is required for maintaining correct moisture levels in compost windrows. This will mainly be sourced from leachate collection ponds, but may also be pumped from a nearby farm dam.

### Energy

Machinery will be powered by diesel.

## Wastes and emissions

### Liquid

Leachate from compost windrows, and wastewater from washdown.

### Atmospheric

Odour from delivery of fish feedstock, and during incorporation of material into windrows, and turning of windrows. Ammonia, hydrogen sulphide and other gases may be emitted from compost windrows if anaerobic conditions arise. Dust may originate from grinding and handling of very dry feedstocks; limited dust from windrow turning.

### Solid

Finished compost product, to be transported off site for bagging and distribution. Empty drums for refuelling or disinfectant.

### Noise

Noise from operation of plant and machinery on site during delivery of feedstock and incorporation of material into and turning of windrows. A mobile wood chipper may be brought onto site occasionally when clearing of trees elsewhere on the property has been undertaken.

### Greenhouse gases

Indirectly emissions through the use of diesel in plant and machinery.

Direct emissions of carbon dioxide released from windrows during turning.
<table>
<thead>
<tr>
<th>Commissioning and operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating hours</strong></td>
</tr>
<tr>
<td>Weekdays 07:00 to 17:00, Saturdays 07:30 to 12:00. One delivery of feedstock every two 2 days during winter (morning, after 8am), and 2 deliveries/day (one after 7am, and one at around 2pm but before 5pm) during summer. Once windrows are ready for turning, turning will occur daily Monday to Friday. Chipping of wood feedstocks on site will occur 2 to 3 times per year on weekdays between 08:00 and 17:00.</td>
</tr>
<tr>
<td><strong>Project timetable</strong></td>
</tr>
<tr>
<td>The DPEMP stated that the proponents wished to be operating in time for the peak mort period of mid-summer (2013-2014) (now passed). Expansion of the existing trial compost site and construction of the secondary leachate dam will commence immediately following approval. Complete site drainage construction will be completed prior to beginning composting operations. The total active composting period is up to 15 weeks. The majority of salmon mortalities occur in the summer which means the peak composting period will be from February through to May.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other key characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are three potential access routes to the compost facility (see Figure 1): Access route #1 – via Esperance Coast Road, and Barry’s Road, and will be mainly used by light vehicles for personnel and morts deliveries. Access route #2 – via the Glendevie Road (Police Point Road), and will mainly be used for deliveries or transport using heavy vehicles. Access route #3 – via Esperance Coast Road, mainly for light vehicles.</td>
</tr>
</tbody>
</table>
Figure 1: Site location and access routes (Source: Appendix 1 of the DPEMP)
Figure 2: Proposed site layout, including location of existing farm dam (Source: Appendix 2 of the DPEMP).
Figure 3: Proposed detailed site layout (Source: Appendix 2 of the DPEMP).
4 Need for proposal and alternatives

The DPEMP states that the proponent has investigated and implemented mortalities management alternatives including rendering for fish oil (Triabunna) and off-site composting (Interlaken). Both these alternatives have provided an interim solution to the ongoing management issue but have inherent problems which include:

- Threatening Huon Aquaculture’s biosecurity through the possibility of pathogen cross-contamination from delivery/removal vehicles going between aquaculture companies;
- Uncertainty regarding the long term viability of these options, due to reliance on the sustainability of the company taking the waste;
- Travel and lack of flexibility - both alternatives involve over 200 kilometres round trip and rely on the availability of cartage contractors; and
- Both options have an ongoing per tonne cost for waste receiving and processing which cannot be recovered or reduced by Huon Aquaculture.

Huon Aquaculture undertook a small composting trial in 2007 to determine the feasibility of aerobic windrow composting of fish mortalities at this particular location. When it was deemed a possible method for managing fish mortalities, the company initiated a level 2 application; this was later withdrawn as morts were able to be sent to Triabunna for processing. It has since been established that the morts are generally of too poor a quality for viable fish oil production and a cost is now associated with morts disposal (making this practice, combined with transportation costs, economically unviable). Disposal via existing operations at Triabunna are becoming increasingly difficult.

The alternative management option for the morts is to send them directly to landfill. This is not considered a favourable option due to the high generation of greenhouse gases the morts would cause (generating methane), when compared with composting (mainly generating the less greenhouse intensive carbon dioxide). Composting is also considered a beneficial reuse of the materials by creating a product which can benefit soil structure and water holding capacity.

Alternative composting methodologies

Alternative methods of composting used in various locations around the world were investigated by the proponent and a summary included in the DPEMP. These include static pile composting, in-vessel/VCU (vertical compost unit) composting, and vermiculture (worm farming).

Static pile composting is essentially the formation of a large non-moving compost pile that is aerated by means of perforated piping placed under the pile which is connected to a commercial air compressor. This method of organic waste stabilising is used where there is a large quantity of volatile and carbon inputs available at any given time. The limitations of static pile composting include the possibility that not all parts of the pile will achieve target temperatures for pathogen and weed seed destruction, and the tying-up of areas of hardstand for between nine to 12 months, due to the slow processing time. The major draw-back of static pile composting for fish mortalities processing is that this waste stream is typified by small daily quantities of waste generation and the waste would have to be stockpiled, thus becoming a very real potential point source for odour and leachate generation. This method of organic waste stabilisation might be of benefit to the aquaculture industry as a whole when large fish kill events occur, but has been discounted as an option for daily mortalities processing.

In-vessel composting has the benefit of odour and moisture containment but comes at a very high cost. The technology required for this method of organics processing is highly specialised and not widely available in Australia. In-vessel compost units are totally reliant on connection to the electricity grid. Waste has to be processed very quickly in these systems to allow room for incoming waste. The resulting “compost”, although pasteurised due to the very high heat (up to...
90°C), then requires a period of maturation in which traditional aeration methods are required i.e. turning by machine.

**Worm farming or Vermiculture** also comes at a very large initial cost for infrastructure and would require pre-processing maceration of fish. Carbon inputs for vermiculture are also far more refined than those that are available for the proposed facility. The Hobart City Council abandoned worm farming as a method of organic waste recycling in 2000 due to the need for further downstream processing of the vermi-compost to make it suitable for use by the general public.

**Aerobic windrow composting** has been chosen by the proponent as the preferred method of managing fish mortalities, for the following reasons:

- In comparison with the above methods it is relatively inexpensive to establish;
- It has been done under Tasmanian conditions previously (successfully, according to the proponent, however this point may be open to debate from an environmental nuisance perspective);
- Existing plant and equipment can be utilised;
- Project specific equipment can be purchased that will integrate with existing machinery and therefore keep costs down; and
- Most potential problems with aerobic windrow composting can be solved through changes to management techniques and even different machinery can be used to achieve the same results i.e. if the windrow turner breaks down, aeration can easily be achieved using a front bucket loader or excavator. Conversely, if there is a problem with in-vessel technology or a mass die-off of worms at a worm farm there is no immediately simple solution.

**Alternative sites**

The DPEMP describes how several alternative composting sites were investigated by the proponent, both during the 2007 trial period and more recently in 2012 and 2013, in an effort to find the best potential location.

The criteria used to evaluate potential sites included:

- Geographic position - with potential to impact neighbours being the primary concern;
- Existing land usage and its importance to the current farming operation;
- Existing infrastructure i.e. existing roads and dams versus the cost of installing new infrastructure; and
- Topography and its potential to impact on the extent of the earthworks required to be undertaken to meet the requirements of the site plan and operational procedures.

The chosen site is considered superior in that it satisfies the first three criteria most favourably. There are some areas of the farm that are less hilly than the selected site and therefore would allow a larger hardstand development, but this saving would be offset by the cost of developing roads and dams (both for leachate collection and water supply). The composting location is relatively isolated from domestic residences and the proximity to the Hideaway Bay facility has benefits from a biosecurity and transport-cost and impact point of view. Additionally, the site is on land owned by the Bender family which provides long-term security of tenure for the facility.

To negate the topographical restrictions of the selected site, the proponent has researched existing composting technologies in other parts of the world and believes that use of a specialised "Brown Bear" windrow turner will allow the most efficient use of available space, as the way in which it moves the compost piles means that no aisles for machinery access are required between windrows.
Biosecurity considerations

The DPEMP also concludes that a local, ‘in-house’ method of processing mortalities waste would provide several biosecurity advantages for the proponent, including:

- No other company will have access to the facility which removes the potential for cross-over by delivery/removal vehicles and the consequent spread of pathogens between companies;
- A short haulage distance from the Hideaway Bay processing plant to the proposed composting site significantly reduces possibility of mishaps occurring during waste transport;
- The near proximity of the proposed composting site to the processing plant increases the flexibility of mort logistics and handling i.e. morts can be removed and processed at short notice or at times of most convenience; and
- Biosecurity at Hideaway Bay will be improved through the re-positioning of the morts handling facility away from the general heavy traffic part of the site.

Social and economic considerations

The DPEMP states that there are two main motivations for the proponents to develop their own waste management solution to morts disposal. Firstly, the company has had ongoing and unrelenting problems with the management of fish wastes when involving external contractors. Secondly, the various waste management alternatives employed by the company have been either very costly or environmentally unsustainable.

The composting facility will only ever process the lowest quality rejects from the fish farming, as the maximum value is always sought from the fish and any waste that can be rendered for fish oil production, will be.

Recent developments with external transport contractors have seen wastes from competitors brought on site during transferral of morts from aquaculture facilities to Triabunna, which threatens the closely-guarded biosecurity of the company (and the industry as a whole). The DPEMP asserts that the proponent has worked very hard to maintain the biosecurity of its fish stocks and the presence of fish wastes from its competitors on site during transport operations is a very real disease threat.

The proponent aims not only to reduce the cost of its waste management through sales of finished compost product to local horticulture and agriculture, but also to improve its environmental performance through daily disposal of waste that is currently problematic. The use of finished compost product in local agriculture is felt to be a beneficial way of managing an ongoing waste problem while helping improve soils.

The huge reduction in cartage distances from several hundred kilometres to several kilometres will also prove beneficial to the greenhouse emissions performance of the company.

The DPEMP also states that the proposal may have a positive benefit to the local economy through direct employment opportunities at the compost facility and indirectly with transport and horticultural/landscaping companies.
5 Public and agency consultation

A summary of the public representation and government agency/body submissions is contained in Appendix 2 of this report.

One representation was received. The main issues raised in the representation related to transport of fish morts to the compost site, and included:

- Noise;
- Dust; and
- Potential for odour.

The DPEMP was referred to a number of government agencies/bodies with an interest in the proposal. Responses were received from the following:

- Air Specialist, EPA Division;
- Waste Management section, EPA Division;
- Food Industry unit, EPA Division;
- Policy and Conservation Assessment Branch (PCAB), Resource Management and Conservation, DPIPWE; and
- Biosecurity and Product Integrity Division, DPIPWE.

The DPEMP Supplement prepared by the proponent provides a response to each of the relevant environmental issues raised by the public and government agencies/bodies.

The proponents have undertaken their own public consultation. The DPEMP states that they intend for the development to be able to work with the local community to make the project a success, with transparent operating practices and the operator available to address any concerns if and when they arise.

The proponents have consulted with local landscape supply businesses to retail the end product.

The DPEMP states:

- Nearest neighbours will be informed of all aspects of the development prior to the public release of the Level 2 activity application.
- The proponents also intend to consult nearest neighbours at 6 monthly intervals once operations are underway so that any concerns that arise can be addressed immediately.
- Contact between neighbours and the proponent has already occurred due to odour complaints from Huon Aquaculture’s nearby blood ponds.
6 Evaluation of key issues

The key environmental issues relevant to the proposal that were identified for detailed evaluation in this report were:

- Odour; and
- Stormwater, drainage and leachate management.

Each of these issues is discussed in the following subsections.

6.1 Odour

Description

Existing environment

The proposed compost site is located within a rural setting with agricultural activity and small landholdings the dominant land uses. The site is part of a much larger property which has been used mainly for cattle grazing following clearing approximately 15 years ago. The nearest residences are located approximately 900 metres and 1,070 metres away to the north-north-west and north-west, respectively. State Forest is immediately to the west of the site. The Hideaway Bay fish farm facility, from where salmon morts for composting will originate, is approximately 4 kilometres away.

The site was used by the proponents for a small composting trial in 2007, with the proponents anticipating applying for a level 2 compost facility at that time, however that proposal was eventually withdrawn as morts were able to be sent elsewhere for rendering. There is a basic hardstand area in place, as well as a small leachate pond, both of which would require expansion and improvement for this proposal, up to a total site area of 1.6 hectares.

The site sits in an elevated position at approximately 150 metres elevation, on a north-east facing hillslope near the top of a north-west–south east running ridgeline, running parallel to the nearby Huon River. The site is subject to the dominant westerly airflow common in Tasmania, however is also influenced by sea breezes coming from the south east during the day (mainly in the afternoons) as winds are channelled along the topography, and by katabatic breezes in night (generally after midnight), from the south west. According to the analysis undertaken for the Odour Impact Study included as part of the DPEMP (Appendix 12), the nearest residence located towards the NNW, receives winds from the direction of the compost facility approximately 2 to 3 per cent of the time during the day (65 to 100 hours per year), and approximately 4 per cent of the time during the night (220 hours per year). The daytime conditions are characterised by unstable, good-dispersion conditions, while conditions at night are much more stable. The Odour Impact Study indicates that wind direction and speed is very similar during the peak composting period (between February and May) to annual wind conditions.

The site receives on average just below 900 mm of rainfall per annum, with the winter months receiving close to twice the monthly rainfall, on average, than the summer months. The Odour Impact Study states that much like a landfill, variables such as air temperature, relative humidity and rainfall are not considered to significantly affect odour emission rate from compost windrows.

There is a history of odour originating from the proponent’s aquaculture operations in the area. Most recently, expansion of fish harvest facilities and bloodwater production have increased the level of odour in nearby settlement ponds which has led to complaints from neighbours. This has now been largely resolved following investment in pond covers and more active management of water treatment and water quality in ponds.
Potential impacts

Odours from aerobic composting facilities (such as dimethyl disulphide, ammonia, dimethyl sulphide, and occasionally, hydrogen sulphide) can be strong, offensive, and travel long distances. Occurrence of offensive odours is primarily related to not maintaining proper aerobic conditions throughout the compost windrows and poor site housekeeping; however odours can potentially occur from a variety of sources throughout the composting process, such as:

- During raw feedstock delivery and incorporation into windrows;
- Failure to incorporate feedstock into windrows immediately on delivery, or rapidly cover windrows;
- Turning of windrows, in particular, the initial turn;
- Failure to maintain proper aerobic conditions in windrows (i.e. imbalances of carbon and nitrogen feedstock materials, moisture and oxygen), sometimes a function of extreme climatic conditions and other unforeseen events, but often related to lack of regular monitoring of windrows and rapid action should adverse conditions begin to occur;
- Vehicles transporting feedstock to site;
- Poor leachate drainage;
- Poor site and equipment cleaning practices;
- Leachate ponds turning anaerobic (insufficient aeration); and
- Spreading of partially composted material offsite by scavenging birds and mammals.

In general, the factors contributing to the travelling of odours offsite are the surface area of the compost windrows, and driving forces such as wind, temperature differences, and material agitation (Spencer, 2007).

Some odours from composting are unavoidable, but offensive odours are a sign that the composting process is not progressing well and is failing to break down volatile inputs and associated pathogens, which along with creation of foul odours will also result in unreliable end product.

Proponent’s assessment of the significance of the potential impacts

The DPEMP identifies odour as the greatest potential impact associated with the proposal and the proponents consider excessive odour generation a threat to the success of the project due to the potential for offence to neighbours and degradation of the surrounding environment. The proponents consider that some odour is unavoidable, but that careful attention to windrow construction and management will ensure odours are minimised.

The Odour Impact Study used CSIRO’s wind and dispersion model TAPM to predict meteorology as well as ground level concentrations of odour from compost windrows. Using estimated odour emission rates (due to the lack of existing data or literature on odour emission rates from fish waste compost facilities) and assuming normal (not upset) conditions at the composting facility, modelling showed:

- Maximum daytime (8am – 5pm) odour ground level concentrations (GLC) of about 2 odour units (OU) (1 hour, in accordance with the Air Quality EPP) were predicted at several areas beyond the boundary of the property on which the compost facility lies, with the daytime maximum odour GLC at the nearest residence predicted to be approximately 1.7 OU (1 hr) (shown on Figure 6.1 of Appendix 12 of the DPEMP).
- Maximum night time (5pm – 8am) odour GLCs were less than 2 OU (1 hr) in all areas along the property boundary, and approximately 1.1 OU (1 hour) at the nearest residence.
• Lower odour GLCs were predicted at other nearby residences than those at the nearest residence.

Based on the information provided in the Odour Impact Study, the proponents conclude in the DPEMP that ground level concentrations of odour at the nearest residence will comply with Schedule 3 of the Tasmanian Environment Protection Policy (Air Quality) 2004 (Air Quality EPP), and that during worst-case conditions (summer, when mortalities are highest) additional mitigation measures will ensure residences are not impacted by odour.

**Management measures**

Sections 4.3 and 4.3.1 of the DPEMP provide a discussion of proposed management practices to minimise nuisance odour from the proposed compost facility.

A number of management commitments are made in the DPEMP which relate directly to odour management:

**Commitment 6:** Replacement machinery will be brought on site if a breakdown occurs.

**Commitment 7:** Fish mortalities delivery will be suspended while mitigation procedures are implemented.

**Commitment 8:** In the event that mortalities cannot be processed at the compost facility, they will be stored at cool store facilities at Hideaway Bay or be sent to an off site waste management (composting) facility.

**Commitment 16:** Odour control will be the responsibility of the site operator and will be overseen by the HAC Environmental Scientist.

**Commitment 17:** Windrow construction will be carried out to compost recipes which are designed to balance the carbon to nitrogen ratio of inputs so as to reduce ammonia production.

**Commitment 18:** Daily monitoring for temperature, CO$_2$ levels and moisture will ensure an ideal windrow environment is maintained and determine the windrow aeration program on a daily basis to reduce the development of anaerobic odours.

**Commitment 19:** Windrows will be aerated whenever CO$_2$ is above 12% and/or temperatures reach 60°C. Windrow moisture levels will be kept between 50-60%.

**Commitment 20:** All volatile inputs (fish morts) will be included into windrows as soon as they are delivered.

**Commitment 21:** Odour mitigation actions will be activated in the unlikely event of an odour complaint, or upset conditions, these include:

- Not turning active windrows when prevailing wind direction is towards the nearest residences.

- Increasing sawdust component of recipe to create an odour blanket or covering with geo-fabric.

- A combination of the above actions.

**Commitment 22:** Quarterly odour audits will be undertaken at nearby residences during the first year of operation.

**Commitment 25:** Coordination of fish waste deliveries with the presence on site of operational staff to ensure the waste can be immediately processed to reduce both odour generation and attraction of avifauna.
Commitment 26: Immediate incorporation of fish mortalities into active compost windrows.

In addition, a number of commitments are made in relation to management of other potential issues at the site but would have implications for odour management, and are discussed in the other relevant sections of this report. In particular, this includes issues relating to drainage and leachate management, and fencing to ensure stock and wildlife are excluded as much as possible from the site.

Public and agency comment and responses

One public representation was received which raised concerns about potential for odours (in addition to noise and dust) from transportation of fish morts to the compost facility site. The representor owns a property along one of the proposed access roads (Access route #1, Appendix 1 of the DPEMP and Figure 1 of this report) to the compost facility. There is no residence on this property at this time; development of a residence would be a discretionary use under the current planning scheme (Esperance Planning Scheme 1989), however Council have advised (pers. comm. to Kate Düttmer dated 25/03/2014, filed in H252116) that under the new draft Huon Valley Draft Interim Planning Scheme 2014 (not yet operational, at the time of writing this assessment report) a house is a permitted development type, as long as the proposed development meets all the relevant development standards.

The proponent responded to these concerns in the DPEMP Supplement. Odour during transportation of salmon mortalities was not considered by the proponents to be a substantial risk, as the morts will be transported to the compost facility in sealed bins, which have held morts in cool storage (to ensure morts have not putrefied before transportation), and which will then be washed on site with antibacterial/antiviral solution before being returned to Hideaway Bay.

The EPA Division’s Air Specialists and Regulatory Officers reviewed the DPEMP and Odour Impact Study and provided comment. Further clarification was required in relation to quantities (volumes versus weights) of morts to be received at the site, and a discussion regarding the possibility of morts being macerated prior to composting was requested. The proponents responded to these issues in the DPEMP Supplement. While macerating may increase composting efficiency, and reduce risk of salmon carcasses being removed from compost windrows by wildlife, the proponents provided feedback that maceration prior to removal from the Hideaway Bay facility was not possible at this time. The option of ensiling mortalities on feed barges as soon as they are removed from pens is currently being explored by the proponents, which involves preservation of fish scraps and wastes in the form of silage (a fermented, high-moisture material) which can then be used as livestock fodder or in the production of biogas. This would have implications for the composting process and may completely remove the need to compost. Whether this occurs in the future or not, it is proposed for this activity that a dedicated, specialist piece of equipment designed for turning windrows (a “Brown Bear windrow turner”) will be used, which allows a certain amount of mechanical degradation as windrows are turned.
Evaluation

It is widely acknowledged in the literature (e.g. DEC, 2004) that open-air compost facilities have the potential to generate significant odour impacts if not operated correctly. Ensuring correct balances of moisture levels, carbon to nitrogen ratios, pH and oxygen levels in compost windrows are maintained will minimise the risk of nuisance odours occurring and affecting nearby residents. In addition, proper management of odours from sources other than windrows on the site and throughout the process must be undertaken, for example through rapid incorporation of highly biodegradable organics into windrows, covering of windrows, ensuring leachate ponds are aerated, good drainage, and good general site housekeeping. These aspects of good compost management are largely addressed through the commitments made by the proponents in the DPEMP.

Modelling of odour emanating from the compost facility, in accordance with the Air Quality EPP (i.e. based on predicted worse case scenarios), was a requirement of the DPEMP Guidelines provided to the proponent. An Odour Impact Study, which included details of meteorological conditions at the facility and in nearby areas, and modelled odour impact at the property boundary and for nearest residences, was provided with the DPEMP (Appendix 12) and reviewed by the EPA Division’s Air Specialists.

The Odour Impact Study provided useful qualitative information about predicted odour transport from the site. The meteorological predictions provided by the models in the Odour Impact Study indicate that air would be flowing from the direction of the compost facility towards the nearest residences approximately 2 to 3 per cent of the time during the day (and with high dispersion conditions), and 4 per cent of the time during the night (with lower dispersion conditions). This indicates that based solely on directions of air flow, the risk of odour nuisance at these nearest residences may be quite low, as long as the compost facility is managed appropriately so that odour emissions are minimised.

The importance of proper management of such as site is reflected in site-specific condition A4, which requires the preparation and submission of a comprehensive Odour Management Plan, both in draft form before operations commence, and then finalised following the first year of operation. This allows lessons learned during the initial operation of the site to be properly incorporated into ongoing site management. An EMP Operations will also be required (standard condition G7) for submission following the initial establishment and trial period of the compost facility, to ensure a broader management document for the facility is prepared and provided to the EPA. It is acknowledged by the proponents in the DPEMP that there would sometimes be a need to act quickly to rectify odour emissions caused by “upset conditions” and this is reflected in the proposed management commitments (in particular, Commitment 21), which are considered appropriate (covered by standard permit condition G8). It is considered a benefit of a relatively simple composting operation such as the one proposed, that actions to rectify problems can be undertaken quickly and easily.

In terms of the numerical modelling for odour undertaken and presented in the Odour Impact Study, it became apparent throughout the course of the assessment that the quantitative outcomes of the modelling were not able to be relied upon to provide any definitive indication of whether environmental nuisance would be experienced beyond the property boundary on which the compost facility is located. This was due to a number of issues with the modelling, both inherent in the modelling of subjective data such as odour, but also due to lack of available data, and the decision-making undertaken in regards to input data.

There is very little data available in the literature on odour emission rates (OERs) from fish waste aerobic composting facilities such as the one proposed, so estimates of OERs from similar facilities composting highly putrescible waste were used in the modelling. The estimated OERs were considered to be appropriately conservative. However, the use of these conservative data was counteracted by the following problems with the Study:
The Air Quality EPP requires modelling based on predicted maximum or worst case scenarios, yet the Odour Impact Study clearly states (page 31) that the odour predictions are based on a “well-run composting facility that is operating normally” and acknowledges that “upset conditions can occur from time to time, for any number of reasons, and it is possible that the resulting OERs may be elevated above the OERs assumed by this study”. Therefore, the modelling has not been undertaken in accordance with the requirements of the Air Quality EPP.

There are some inconsistencies between data provided in the DPEMP and data used in the Odour Impact Study. Using the estimated volumes of morts during the peak mortality season, and the estimated windrow dimensions, as provided in the DPEMP, the number of windrows (and therefore the surface area from which odours would emanate) on which odour emissions have been modelled has been significantly underestimated (by potentially up to 100 per cent) in the Odour Impact Study.

Modelling was split into times of “facility open” (8am to 5pm) and “facility closed” (5pm to 8am), which according to the EPA Division’s specialists, introduces uncertain elements into the modelling results. Ideally, modelling should have been undertaken over the whole year (i.e. 8,760 hours), and extreme or non-compliant cases reviewed as necessary.

The Odour Impact Study does not consider odour sources other than the compost windrows (e.g. leachate ponds).

These issues mean that the numerical results of odour modelling have not been relied upon for this assessment.

Clause 13 of the Air Quality EPP recommends that where the Board is satisfied that an odour from an activity is likely to cause an environmental nuisance, the Board should apply an odour limit of 2 Odour Units, at or beyond the boundary of the land on which the odour source is located. As stated previously, the likelihood of odour nuisance from this proposed activity depends largely on how well the composting operation is managed. If managed well, and combined with the prevailing meteorological conditions meaning odour transport towards nearest residences is minimal, odour nuisance is considered unlikely, and a specific condition applying the boundary limit may not be required. Condition A4 requires the proponent to demonstrate appropriate management and mitigation actions will be put into place both before and during the occurrence of upset conditions, and it is considered this is the greatest determinant of whether odour nuisance is likely to occur.

Ultimately, for a facility and proposal such as this, where there are many variables involved in the management of odours from the site, it is considered that it is the proponent’s responsibility to undertake any measures necessary to ensure odour does not impact on nearby residences. This is reflected in standard permit condition A3. Maintenance of a complaints register (standard condition G6) will also be required so that complaints can be recorded and reported as part of the EMP Operations (standard condition G7) and cross-checked with records of windrow monitoring (site-specific condition M1), site management, waste processed and other related actions undertaken at the facility (site-specific condition WM2).

Given the highly putrescible nature of the salmon morts inputs into the compost process, stockpiling of morts on site must be specifically prohibited (site-specific condition OP10). To ensure rapid management of nuisance odour during times of “upset conditions”, the proponent will be required to ensure sufficient sawdust is available on site so that windrows can be immediately covered (site-specific condition OP11). Additionally, a requirement is included for a responsible staff member to be on site during feedstock delivery (site-specific condition OP4) and for the appropriate machinery to be available for rapid incorporation of salmon morts into compost windrows (site-specific condition OP6), to ensure putrescible feedstocks are not exposed for any longer than necessary.

Given the distance to the nearby residents and the agricultural nature of the surrounding landscape, the risk of the facility creating environmental nuisance through odour is considered minimal, as long as close and appropriate management of the site and its operations occurs. In the
event that complaints are received in relation to the facility, site-specific conditions relating to recording of data related to site activities (M1 and WM2) will allow the Division's regulatory officers to trace back specific management actions with odour events so that those actions may be avoided in the future. Undertaking good site management and close compliance with the permit conditions by the proponent will ensure the risk of odour nuisance from the site is low.

**Conclusions**

The proponent will be required to comply with the relevant DPEMP commitments summarised above via standard condition G8 (Commitments).

The proponent will be required to comply with the following standard (generic) conditions, listed in the order in which they have been discussed above:

- **G7** EMP Operations
- **A3** Odorous gases
- **G6** Complaints register

The proponent will also be required to comply with the following site-specific conditions, listed in the order in which they have been discussed above:

- **A4** Odour Management Plan
- **M1** Compost windrow monitoring
- **WM2** Record keeping
- **OP10** Stockpiling of salmon carcasses prohibited
- **OP11** Emergency cover for windrows
- **OP4** Site staff
- **OP6** Compost windrows

### 6.2 Stormwater, drainage and leachate management

**Description**

**Existing environment**

The proposed compost facility is located in an elevated position in the landscape, with a small hilltop to the west of the site being a source of stormwater run-on to the facility. An existing cut-off drain runs through the site, presently used to capture water from the hillside above and feed a farm dam located approximately 300 metres north west of the proposed composting area. A hardstand area already exists on the site, and a small leachate collection pond.

According to the DPEMP, no sensitive water resources are located nearby or downhill of the site. A number of non-perennial minor tributaries of the Huon River occur in the area. No groundwater bores were found within 1 kilometre of the site. The nearest bores found indicate a standing water level of approximately 9 metres with a low quality yield. Based on field drilling and information from Mineral Resources Tasmania (MRT)'s database, it is estimated that groundwater is at a depth of greater than 20 metres at the site.

The area receives close to 900 mm of rainfall per annum, with rainfall exceeding evaporation for the months of May, June, July and August.
Potential impacts

The DPEMP identifies the contamination of ground and surface waters by leachate as a potential environmental impact of significance and states that emission pathways may include direct leaching to ground water, surface storm water contamination of creeks and water holes and “wicking”- which may occur in very wet areas where ground water is absorbed into the compost feed stocks. According to the DPEMP, the consequences of contamination of waters by leachate include pollution of drinking and stock waters, algal blooms, and poisoning of native flora and fauna.

The NSW Environmental Guidelines for Composting and Related Organics Processing Facilities (DEC, 2004) state that leachates can be acidic, particularly if generated under anaerobic conditions, and this can cause dissolution of metals and metallic compounds that may be present in organic matter. Under aerobic conditions, alkaline leachates can be formed from organics with low carbon and high nitrogen ratios (such as animal organics). Leachates can be high in nutrients, which makes them a favourable host media for bacteria and other microorganisms, and gives them a high biochemical oxygen demand.

Excessive stormwater running on to compost windrows can contribute to the production of excessive leachate, and improper drainage on the composting hardstand can create anaerobic conditions in windrows which will affect compost success as well as generate odours. Additionally, poorly lined and/or inadequately-sized leachate collection ponds may leak contaminated leachate into the surrounding land, surface, and ground waters.

Proponent’s assessment of the significance of the potential impacts

Leachate has been identified in the DPEMP as one of the issues most likely to have an environmental impact. Some leachate is an unavoidable by-product of the process but the DPEMP states that leachate production is not envisaged to be very high, even with the relatively high moisture contents of the fish. During composting trials, the proponents found that irrigation of the compost windrows was required starting from the first week of composting, due to the drying nature of the composting process.

The DPEMP states that protection of surface and ground waters has been the principal influence in the design of the facility given the inevitability of some generation of contaminated water from the site.

Management measures

A number of management commitments are made in the DPEMP which relate to stormwater, drainage and leachate management:

**Commitment 1:** The hardstand base will be compacted road base over compacted parent clay at a minimum of 300mm. Compaction by heavy vibrating roller or 20 t excavator will be to 98% of maximum density.

**Commitment 2:** The ‘active’ composting hardstand area will be graded to no less than 2 and no more than 10% to ensure all leachate and storm water is directed to the leachate collection ponds.

**Commitment 3:** Core construction of both the primary and secondary leachate collection ponds will be of suitable clay won from a soil pit (as identified by the SFM Soil Solutions report) during the expansion of the trial site.

**Commitment 9:** The wash down area will be a 100mm reinforced concrete slab with raised sides. It will have a water collection pit that will be piped to the leachate collection drains which run to the primary leachate pond.
Commitment 10: All storm water emanating from the hill behind the facility will be diverted away by a surface water channel.

Commitment 11: All surface water from the site will be treated as leachate and will be directed by dish drains and bund walls to the leachate collection ponds.

Commitment 12: Water from the smaller primary leachate collection pond will be pumped back to the active composting windrows year round. It is anticipated that nutrients and fish derived lipids will settle in this pond.

Commitment 13: Lipid or fat concentrations will be skimmed or trapped at the primary leachate collection pond and removed to the active composting windrows for processing.

Commitment 14: The secondary leachate pond will have a minimum water holding capacity of 1.8 ML to allow for storage of any overflow from the primary leachate pond during periods of high rainfall or storm events.

Commitment 15: Both leachate collection ponds will be lined with suitable clay from the area above the compost hardstand as identified in the SFM Soil Solutions report.

Public and agency comment and responses

No comments in relation to stormwater, drainage and leachate management were received.

Evaluation

Minimising stormwater running on to compost windrows, balancing windrow irrigation regimes with rainfall, and construction of hardstands to ensure leachate seepage does not occur and will allow appropriate drainage from windrows towards a well-designed and constructed leachate collection facility, are all required to ensure leachate and any negative impacts of leachate are minimised.

The DPEMP management commitments are considered appropriate in addressing these requirements and the proponent should be required to comply with these commitments through standard condition G8. Figures 2 and 3 of this report show the proposed layout and drainage features of the proposal.

The commitments made in relation to drainage and stormwater management on site should be reinforced by the inclusion of standard permit conditions in relation to these issues (standard conditions E1 and E2), and site-specific conditions relating to stormwater management (site-specific conditions E3 and E4).

To build on the management commitments made in the DPEMP and reinforce the importance of properly constructed leachate collection and storage systems, site-specific condition E5 specifically requires a leachate collection system to be constructed, and site-specific conditions CN1 and CN2 provide minimum standards for construction of working areas and leachate storage systems (based on the requirements for compost facilities in NSW; DEC, 2004). Appropriate construction of the hardstand, storage and other working areas, drainage, and leachate ponds, combined with surface and ground waters being located at significant distances from the facility, will ensure the risk of contamination of surface and ground waters is minimal.

A study was undertaken for the DPEMP to determine whether soils in the vicinity of the compost facility would be suitable for use in construction of the hardstand and leachate collection ponds (Appendix 5 of the DPEMP). The proposed designs of the hardstand and leachate collections ponds are considered appropriate but are reinforced by the inclusion of conditions CN1 and CN2. It is noted that the secondary leachate collection pond may require a permit under Part 8A of the
Water Management Act 1999 in relation to dam safety, as the pond is greater than 1 megalitre in volume.

A vehicle washdown facility should also be required to ensure that vehicles leaving the site following delivery of feedstocks are clean (standard condition OP2). DPEMP commitment 9 is made in relation to the construction and drainage of this washdown area.

**Conclusions**

The proponent will be required to comply with the relevant DPEMP commitments summarised above via standard condition G8 (Commitments).

The proponent will also be required to comply with the following standard (generic) conditions, listed in the order in which they are discussed above:

- **E1** Perimeter drains
- **E2** Stormwater
- **OP2** Vehicle wash facilities

The proponent will also be required to comply with the following site-specific conditions, listed in the order in which they are discussed above:

- **E3** Stormwater to be excluded
- **E4** Contamination of stormwater
- **E5** Leachate management
- **CN1** Minimum design requirements for working surfaces
- **CN2** Minimum design requirements for leachate storage systems
7 Other environmental issues

In addition to the key issues, the following environmental issues are considered relevant to the proposal and have been evaluated Appendix 1.

- Atmospheric emissions (other than odour);
- Noise;
- Weed management;
- Solid and controlled waste management;
- Biodiversity and natural values;
- Greenhouse gases and ozone depleting substances;
- Heritage;
- Health and safety;
- Dangerous goods;
- Social and economic issues;
- Fire risk;
- Decommissioning and rehabilitation; and
- Traffic and transport.
8 Report conclusions

This assessment has been based upon the information provided by the proponent in the permit application, DPEMP, DPEMP Supplement and in correspondence and discussion between the EPA Division and the proponent and the proponent’s representatives.

This assessment has incorporated specialist advice provided by EPA Division scientific specialists and regulatory staff, other Divisions of DPIPWE and other government agencies.

This assessment has also taken into account issues raised in public submissions.

It is concluded that:

1. the RMPS and EMPCS objectives have been duly and properly pursued in the assessment of the proposal; and
2. the assessment of the proposal has been undertaken in accordance with the Environmental Impact Assessment Principles.

It is concluded that the proposal is capable of being managed in an environmentally acceptable manner such that it is unlikely that the RMPS and EMPCS objectives would be compromised, provided that the Permit Conditions - Environmental No. 8827 appended to this report are imposed and duly complied with, including commitments made by the proponent in the DPEMP and DPEMP Supplement.
Environmental Assessment Report and conclusions, including permit conditions, adopted:

John Ramsay  
Chair  
Board of the Environment Protection Authority  
Meeting date: 17 June 2014  

23 JUN 2014
9 References

Australian Standard for composites, soil conditioners and mulches (AS4454:2012)


10 Appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix 1</td>
<td>Assessment of other issues</td>
</tr>
<tr>
<td>Appendix 2</td>
<td>Summary of public and agency submissions</td>
</tr>
<tr>
<td>Appendix 3</td>
<td>Permit conditions - environmental</td>
</tr>
</tbody>
</table>
### Appendix 1  Assessment of other issues

#### Issue 1

<table>
<thead>
<tr>
<th>ATMOSPHERIC EMISSIONS (OTHER THAN ODOR)</th>
</tr>
</thead>
</table>

**Description of potential impacts**

Dust may be generated during turning of windrows (bioaerosols), grinding of feedstocks, handling of dry feedstocks, during screening and loading of final compost product onto trucks, or from unsealed roadways. Dust may create nuisance and can be harmful to human health (particularly via risk of infection from Aspergillus fumigatus, a fungus typically found in soil and decaying organic matter).

**Management measures proposed in DPEMP**

The DPEMP states that to ensure dust is kept to a minimum:

- all dry materials will not be handled during windy periods and will be kept covered or wetted down if not immediately incorporated into windrows;
- screening will only take place (if required at all) when conditions allow; and
- grinding of carbon inputs will not take place at the compost site.

Bioaerosols from turning of windrows should not increase above background levels provided sound management of the composting process occurs. To minimise risk:

- fully enclosed cabs with air conditioning or appropriate ventilators will be provided for site operators;
- Huon Aquaculture employees showing susceptibility to ‘composter’s lung’ (i.e. decreased immune function, chronic lung complaints) will not be seconded to work at the composting site;
- Employees will be given appropriate training; and
- Hand wash will be provided at the site.

DPEMP Commitment 23 states that dust suppression will be achieved by avoiding dry materials handling during periods of high wind and water spraying of roadways will be employed where necessary. Basic OH & S procedures will be followed and machinery with air-conditioned enclosed cabs will be provided.

**Public and agency comment**

1 public representation was received which raised the issue of potential for dust to be created by trucks taking morts to the compost site, as they passed the representor’s property (Barry’s Road).

**Evaluation**

The DPEMP commitment and standard permit conditions controlling dust emissions are considered adequate for management of dust from the compost facility. In regards to the risk of dust originating from trucks using the Barry’s Road access track past the representor’s property, the number of vehicles is considered minimal (maximum 2 deliveries per day during the summer months/4 trips per day, and maximum 2 – 3 deliveries per week in winter, with occasional additional movements for compost product deliveries and if there are wet weather access problems for other access routes). The proponents have indicated that the delivery vehicle for fish waste travelling on this route will likely be a light vehicle, such as a utility, with a trailer. Given the relatively narrow, poor quality of this unsealed road, it is likely that the vehicles will need to travel at very low speeds, which reduces the risk of dust generation. There is no residence on this property at this time. Council may consider the quality of this unsealed access road in their planning assessment. Deliveries of other materials (wood waste) are more likely to come via alternative access roads such as the Glendevie Road.

**Conclusion**

The proponent will be required to comply with the relevant DPEMP commitment summarised above. The proponent will also be required to comply with the following standard (generic) conditions:

- **G6** Complaints register
- **G8** Commitments
- **A1** Covering of vehicles
- **A2** Control of dust emissions
### Issue 2

**NOISE**

**Description of potential impacts**

Deliveries of feedstock to the site, and transport of finished product from the site, use of heavy machinery for incorporation and turning of material into windrows may create noise nuisance for nearby residents. Transport of feedstock to the site and compost product from the site may create noise nuisance for residents along the transport routes. Occasional wood chipping on site may be required which may also create noise nuisance for nearby residents.

**Management measures proposed in DPEMP**

The DPEMP states that noise levels will not be above the ambient background levels of a typical agricultural area. Proposed operating hours for the facility are 0700 to 1700 hours Monday to Friday and 0730 to 1200 hours on Saturdays. Cartage hours will be between 0700 and 1700 hours during summer and between 0800 and 1600 hours in winter.

The DPEMP states that morts deliveries will be made using a light utility-type truck and there will be no significant noise impact from this activity. There will be more movements in summer than in winter (two morts deliveries expected per day in summer and one delivery every second day in winter).

Use of a wood chipper would take place approximately twice a year and may be undertaken for a period of three to four days at a time, on weekdays between 0800 and 1700 hours.

The nearest residents to the proposed compost site are located approximately 1 kilometre away. DPEMP Commitment 24 states that noise generation will not be greater than that of the surrounding agricultural areas.

**Public and agency comment**

1 public representation was received which raised the issue of potential for noise from trucks taking morts to the compost site, as they passed the representor’s property.

**Evaluation**

The DPEMP commitment and standard permit conditions controlling operating hours and noise levels are considered adequate to control noise emissions. The activities taking place on site are considered similar to normal agricultural activities and feedstock incorporation and turning of windrows is likely to take less than 1 hour per day. The proposed operating hours are reflected in non-standard (site-specific) condition OP1. In regards to noise along transport routes, as raised in the representation, the number of vehicles proposed for the delivery of materials to the facility is considered minimal, and will be operating during daylight hours only, and is therefore unlikely to create noise nuisance. It is noted that no residence exists on the representor’s property at this time. The proponents indicated in the DPEMP Supplement that regular surveying of local residents in regards to noise and odour issues will be undertaken to ensure any problems arising can be managed. Standard condition G6 will require a public complaints register to be maintained.

In relation to intermittent operation of mobile woodchipping equipment on site, and the risk of noise nuisance from this specific equipment (despite apparently infrequent proposed use), site-specific condition N1 is included in relation to times and mode of operation of such equipment.

**Conclusion**

The proponent will be required to comply with the relevant DPEMP commitment summarised above. The proponent will be required to comply with the following standard (generic) conditions:

- **G6** Complaints register
- **G8** Commitments

The proponent will be required to comply with the following non-standard (site-specific) condition:

- **N1** Mobile woodchipper operation
- **OP1** Hours of operation
<table>
<thead>
<tr>
<th>Issue 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WEED MANAGEMENT</td>
<td></td>
</tr>
<tr>
<td>Description of potential impacts</td>
<td>Improperly composted material containing weed seeds can spread weeds to areas where the end compost product is used. End product can also be contaminated by weeds growing around the compost facility.</td>
</tr>
<tr>
<td>Management measures proposed in DPEMP</td>
<td>The DPEMP states that for weed seed and plant pathogen destruction, compost windrows must be maintained at temperatures above 55°C for a period of 3 days, to meet the requirements of the <em>Australian Standard for composts, soil conditioners and mulches</em> (AS4454:2012). The composting trial previously undertaken at the site showed the 55°C was able to be maintained or exceeded for periods of 6 to 8 weeks. The DPEMP states that it is the aim of the composting facility to produce weed seed, plant and human pathogen-free compost. Apart from thermophilic destruction of such contaminants it is not envisaged that they will be present in the feedstocks in the first place. All the high carbon inputs will be forestry derived (saw dust from local mills and wood chip from the farm), and the high nitrogen inputs will be fish waste from products processed for human consumption.</td>
</tr>
<tr>
<td>Public and agency comment</td>
<td>No public representations in relation to weed management were received. The Policy and Conservation Assessment Branch (PCAB), Resource Management and Conservation Division (DPIPWE) recommended that weeds on the site be managed to minimise potential for weed propagules to the exported from the site in final compost product.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Given the nature of the feedstocks and the thermophilic process of composting it is unlikely that weeds will be present in the final compost. Standard weed management practices should be undertaken on site to ensure final compost product is not contaminated by weeds when being prepared for transport offsite (standard condition OP12).</td>
</tr>
<tr>
<td>Conclusion</td>
<td>The proponent will be required to comply with the following standard (generic) condition: <strong>OP12</strong> Weed management</td>
</tr>
</tbody>
</table>
SOLID AND CONTROLLED WASTE MANAGEMENT

Description of potential impacts

Fish farm waste is designated a controlled waste and therefore requires particularly careful management to avoid adverse impacts on the environment. The transportation of controlled waste requires a permit. Solid waste, if not appropriately managed at the compost facility, may contaminate compost windrows and final compost product.

Management measures proposed in DPEMP

The DPEMP indicates (page 15) that fish morts will be transported to the compost facility using a dedicated vehicle “with appropriate registration as a controlled waste handler”, most likely a utility and trailer carrying tightly sealed bins.

There will be no office or amenities building on site due to the proximity to facilities at Hideaway Bay. Any refuse generated (e.g. empty fuel drums, disinfectant containers) would be taken back to Hideaway Bay and dealt with via existing waste management practices for that facility. DPEMP Commitment 31 is made in this regard: *All empty fuel and oil containers will be removed from the site and disposed of appropriately.*

Some alternative waste products were considered by the proponent as possible feedstocks for the compost, including sea weed collected from net washing, and fish guts from fish processing. Neither was considered suitable for this composting proposal.

The following DPEMP commitments are made in relation to record keeping:

Commitment 42: *Records of mortalities volumes will be kept by the company for its own internal monitoring and these will also track the exact volume of waste being processed at the site.*

Commitment 43: *A record will be kept of all out going product and its destination and intended application.*

Public and agency comment

No public or agency representations were received in relation to waste management.

Evaluation

A permit to transport the fish waste to the compost facility will be required (standard permit condition WM1). Site specific condition WM2 reflects DPEMP Commitment 42 and will require the proponent to record details of the controlled waste which is brought to the facility and management actions undertaken, and to retain records, so that quantities and other details of the waste used as compost feedstock can be appropriately tracked. Site-specific condition OP9 restricts the permitted waste types to be present on the site to salmon carcasses from Hideaway Bay, and wood waste, to ensure contamination of the compost windrows with foreign materials (which may cause upset conditions in the compost windrows, and/or contaminate the final product) does not occur. Given the proximity of the site to the Hideaway Bay operations, it is unlikely that workers will remain on site once the necessary operational procedures are undertaken. The risk of generation of solid waste by workers (e.g. domestic-type rubbish) is low and therefore risk of contamination of compost windrows with garbage is considered low.

Conclusion

The proponent will be required to comply with the relevant DPEMP commitments summarised above.

The proponent will be required to comply with the following standard (generic) conditions:

G8 Commitments

WM1 Controlled waste transport

The proponent will be required to comply with the following site-specific conditions:

OP9 Permitted waste types

WM2 Record keeping

Other information relating to waste management will be included in Schedule 3: Information of the permit:

OI1 Waste management hierarchy
**Issue 5**

**BIODIVERSITY AND NATURAL VALUES**

**Description of potential impacts**

The compost site is located in cleared, established grazing land and impacts on native vegetation are unlikely. Protected matters/natural values searches indicate that a number of significant fauna species may have potential habitat in areas surrounding the site, however none have been observed on site.

The salmon component of the composting may attract birds and mammals (e.g. Tasmanian devil, spotted tailed quolls) to the site. Scavengers can scatter fish carcasses which can increase risk of spread of disease, become an odour nuisance, and threaten biosecurity (should carcasses be carried and dropped at the fish processing area at Hideaway Bay).

Additionally, any activity that attracts Tasmanian devils and facilitates their congregation increases the risk of transmission of Tasmanian Devil facial tumour disease.

**Management measures proposed in DPEMP**

The following commitments are made in the DPEMP:

Commitment 4: **The entire perimeter of the site will be fenced with stock and wildlife proof fencing.**

Commitment 5: **The perimeter fence will be regularly inspected and maintained to ensure the site does not become a transmission point for Tasmanian Devil facial tumour disease.**

Commitment 25: **Coordination of fish waste deliveries with the presence on site of operational staff to ensure the waste can be immediately processed to reduce both odour generation and attraction of avifauna.**

Commitment 26: **Immediate incorporation of fish mortalities into active compost windrows.**

Commitment 27: **Cover fish waste in the first windrow with 0.6 to 0.9 cubic metres of sawdust to limit attraction of avifauna.**

Commitment 28: **Mammals will be prevented entry to the site through the installation of the specially designed perimeter fence.**

**Public and agency comment**

A member of the public expressed concerns regarding the composition of leachate pond water and potential risk of harm to bat species. These concerns were received via communication with the EPA Division's fish farm regulatory officer. It was not received as a public representation.

PCAB provided comment on the DPEMP, stating that providing the measures outlined in the DPEMP to minimise attraction of scavengers to the site are implemented, it is considered unlikely that the development will have an impact on species listed under the **Threatened Species Protection Act 1995.**
**Evaluation**

Tasmanian bat specialist Lisa Cawthen was contacted in regards to the issue raised regarding bats and leachate ponds. Ms Cawthen advised (pers. comm email to Kate Düttmer dated 27/3/2014, filed at H263926) that most research has been undertaken in relation to wastewater ponds at mines, for example, insectivorous bats interacting with wastewater ponds containing cyanide at gold mines (e.g. Griffiths, 2013). Myotis bats, which spend a majority of time foraging over water and which may be a concern, are not present in Tasmania. Tasmanian bats however are insectivorous and should insect activity increase above the leachate ponds, then they may be attracted to the leachate ponds onsite. Ms Cawthen also advised that without knowing what the characteristics of the leachate pond water will be, she was not able to definitively say whether there would be risks to Tasmanian bats from the leachate ponds, however, the increased insect activity could be beneficial. Leachate from composting organic material is likely to be very rich in nutrients and may contain some pathogens. The proponents have indicated that they expect that much of the leachate will be recycled back on to the compost windrows. It is not considered likely that bats would be adversely affected by the leachate ponds at this site.

The proposed management commitments are considered adequate for ensuring scavenging birds and mammals are not attracted to the compost facility. The proponent will be required to manage leachate so that it does not create nuisance odour (site-specific condition E5) which will reduce the risk of birds/mammals being attracted to the site. Site-specific condition OP4 requires that the site must be attended by staff when feedstocks are received so that immediate incorporation of feedstocks into windrows can be undertaken. Site-specific condition OP5 reflects the DPEMP Commitment 28 and requires the construction of an electrified stock and wildlife-proof fence around the facility to exclude scavenging animals from the composting area. Site-specific condition OP7 requires the proponent to undertake any measures to monitor and control removal of salmon carcasses by wildlife from composting windrows.

**Conclusion**

The proponent will be required to comply with the relevant DPEMP commitments summarised above. The proponent will be required to comply with the following standard (generic) conditions:

<table>
<thead>
<tr>
<th>G8</th>
<th>Commitments</th>
</tr>
</thead>
</table>

The proponent will be required to comply with the following site-specific conditions:

<table>
<thead>
<tr>
<th>E5</th>
<th>Leachate management</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP4</td>
<td>Site staff</td>
</tr>
<tr>
<td>OP5</td>
<td>Perimeter fencing</td>
</tr>
<tr>
<td>OP7</td>
<td>Prevention of removal of salmon carcasses from windrows by wildlife</td>
</tr>
</tbody>
</table>
### Issue 6

**GREENHOUSE GASES AND OZONE DEPLETING SUBSTANCES**

**Description of potential impacts**

Inappropriate management of compost piles may create anaerobic conditions, releasing methane into the atmosphere, which is a more greenhouse-intensive gas than carbon dioxide (produced by compost under aerobic conditions). Transportation of materials to site consumes fossil fuels, contributing to greenhouse gas emissions. Some refrigerants, solvents, etc may be ozone depleting substances and are also greenhouse gases.

**Management measures proposed in DPEMP**

Disposal of salmon morts to landfill would cause methane generation, whereas aerobic composting (if done properly) creates carbon dioxide. Methane has approximately 21 times the warming potential of carbon dioxide, so composting as opposed to disposal to landfill would reduce greenhouse gas emissions associated with disposal of salmon morts.

A significant reduction in transport distances for morts processing and/or disposal reduces the consumption of diesel fuel and hence emission of greenhouse gases.

No ozone depleting substances will be used on site.

**Public and agency comment**

No public or agency representations were received in relation to greenhouse gases and ozone depleting substances.

**Evaluation**

Appropriate management of the compost windrows will ensure that conditions in the windrows remain optimal and aerobic, so that carbon dioxide is produced as opposed to methane (this also has benefits for odour control). The significantly reduced transport distance compared to the current practice of sending morts to Triabunna is a positive aspect of this proposal.

**Conclusion**

No specific greenhouse gas commitments are made in the DPEMP, nor are any permit conditions required. Appropriate management of the site will ensure greenhouse gas emissions are minimised, and local composting is a more favourable method of managing salmon morts than disposal to landfill or transporting long distances for processing/disposal, from a greenhouse gas emissions perspective.
### Issue 7

**HERITAGE**

#### Description of potential impacts

Construction of the hardstand and associated infrastructure may disturb Aboriginal or European cultural heritage.

#### Management measures proposed in DPEMP

The proponent makes Commitment 41 in the DPEMP: *Aboriginal heritage officers will be alerted and construction halted if any sign of Aboriginal activity is discovered during the development of the site.*

#### Public and agency comment

Aboriginal Heritage Tasmania was consulted during development of the DPEMP guidelines. They advised that a search of the Tasmanian Aboriginal Site Index (TASI) was undertaken and that there are no Aboriginal heritage sites recorded within or close to the property. From a review of previous reports it is believed that the area has a low probability of Aboriginal heritage being present. Therefore there was no requirement for an Aboriginal heritage investigation for this proposal and Aboriginal Heritage Tasmania indicated that they have no objection to the project proceeding. An *Unanticipated Discovery Plan* (available from Aboriginal Heritage Tasmania) should be employed by the proponent during ground-disturbing works to aid in meeting requirements under the *Aboriginal Relics Act 1975*.

#### Evaluation

Much of the disturbance of ground has already occurred and there will be little further disturbance beyond the existing composting site. Aboriginal Heritage Tasmania advised that there is a low probability of Aboriginal heritage being present in the proposal area. Aboriginal heritage is protected under the *Aboriginal Relics Act 1975* and the proponent’s commitment to cease work and contact authorities should suspected heritage be uncovered during site works is considered appropriate.

#### Conclusion

The proponent will be required to comply with the relevant DPEMP commitment summarised above. The proponent will be required to comply with the following standard (generic) condition:

**G8 Commitments**

Other information relating to Aboriginal heritage will be included in Schedule 3: Information of the permit:

**LO3 Aboriginal relics requirements**
HEALTH AND SAFETY

Description of potential impacts

Compost can contain human pathogens such as salmonella, listeria or E. coli, and composting operations can release bioaerosols (airborne particulates containing bacteria, fungal spores such as Aspergillus fumigatus or ‘composter's lung’, pathogens, or other micro-organisms), which, if inhaled, may be harmful to the health of workers and site visitors. Compost windrows can attract flies and vermin, which if not controlled adequately, can pose amenity, health and environmental hazards.

Management measures proposed in DPEMP

Public access to the site will be controlled via locked gates on the property. Visitors to the site will be under guidance of the site operator. All visitors will be warned of the need to observe basic hygiene practices. Disinfectant footbaths will be deployed at the site, and protective clothing to be worn to observe company biosecurity measures. Appropriate management of moisture content of compost (addressed in Issue 1) will ensure excessive dust is not produced throughout the composting process.

The following commitments are made in the DPEMP:

Commitment 35: Those nearest neighbours identified through the DPEMP will be informed of all aspects of the development prior to the public release of the level 2 activity application, and will also be consulted at 6 monthly intervals when operations are underway (after year 1).

Commitment 36: There will be no public access to the composting facility unless they are invited to do so by Huon Aquaculture Company management. Footbaths (Virkon) will be deployed at the site and coveralls, boots and other protective clothing will be made available.

Commitment 37: All operational staff will be instructed in basic hygiene awareness and be trained in compost specific aspects of organic waste management.

Commitment 38: Compost turning equipment will be fitted with fully enclosed air-conditioned cabs and respirators will be made available to staff if required and/or desired.

Commitment 39: Finished product will be tested for organic and inorganic contaminants and human pathogens E. coli, Salmonella, Faecal coliforms and Listeria for every 100 dry tonnes of production.

Additional management commitments are made in relation to dust control; see Issue 1.

Public and agency comment

No public or agency representations were received in relation to health and safety.

Evaluation

The proposed management commitments are considered adequate for managing public and employee health risks. The site is in a relatively remote rural area with no passing traffic, and it is unlikely that public access will occur. Management of dust is considered important in protecting health of workers and the public, particularly when handling final compost product for transport off site. This is discussed under Issue 1. Proper composting, undertaken in a biologically controlled manner, effectively destroys pathogens through the metabolic heat generated by microorganisms (bacteria, actinomycetes, and fungi) during the process (Golueke, 1981, and Crawford, 1985, in Liao et al, 1994). No discussion is provided in the DPEMP in relation to flies and vermin; however it is considered that good management of the site (e.g. in particular for odour and wildlife issues) should ensure that the risk of fly and vermin problems are minimised.

Conclusion

The proponent will be required to comply with the relevant DPEMP commitments summarised above. The proponent will be required to comply with the following standard (generic) condition:

G8 Commitments
DANGEROUS GOODS

Description of potential impacts

The accidental release of a dangerous substance used on site (diesel fuel, hydraulic and motor oils) into the environment may result in environmental harm (pollution of soils, waterways or groundwater). These substances may also contaminate final compost product should they come in contact with compost windrows.

Management measures proposed in DPEMP

The DPEMP states that any inorganic or hazardous materials produced by the proponents will be dealt with by the existing waste management practises of the company (page 5 of the DPEMP).

The proponent makes the following commitments in the DPEMP:

Commitment 29: Diesel re-fuelling will be carried out away from compost operations at a re-fuelling area that will contain a dedicated spill kit.

Commitment 30: Any oil spills will be cleaned up with an appropriate hazardous clean-up kit to be kept on site.

Commitment 31: All empty fuel and oil containers will be removed from the site and disposed of appropriately.

Public and agency comment

No public or agency representations were received in relation to dangerous goods.

Evaluation

The proponent’s commitments regarding handling of dangerous goods are considered appropriate. Combined with standard permit conditions, they are considered sufficient management of risk to the environment.

Conclusion

The proponent will be required to comply with the relevant DPEMP commitments summarised above. The proponent will be required to comply with the following standard (generic) conditions:

G8 Commitments

H1 Storage and handling of hazardous materials

H2 Spill kits

Other information relating to dangerous goods will be included in Schedule 3: Information of the permit:

LO2 Storage and handling of Dangerous Goods, Explosives and dangerous substances
### Issue 10

**SOCIAL AND ECONOMIC ISSUES**

#### Description of potential impacts

The operation of a composting facility may provide opportunities for employment for local residents. According to the 2011 census, aquaculture is the biggest employer in the Huon region, particularly as the forestry industry has shrunk. With the ongoing expansion of aquaculture operations in the region, concerns in the community have increased due to issues such as noise from towboats, visual concerns in relation to debris and litter on shorelines, odour from harvesting/processing facilities and from blood ponds, and concerns regarding trucks and roadkill of native mammals.

Local management of fish mortalities would reduce the amount of large trucks on local roads as morts would no longer need to be transported to Triabunna, reducing safety risks to local residents and reducing roadkill risk. It is also considerably cheaper for the proponents to manage waste in this way, and also ensures that company biosecurity is enhanced as no interaction is required with other fish farm operators.

The production of compost may benefit local landowners for use in improving soils and may also be supplied to local landscaping companies.

#### Management measures proposed in DPEMP

The DPEMP states that the proponents will undergo ongoing consultation with nearby neighbours in regards to activities at the site, and to address any concerns residents may have in regards to traffic, odour, noise, or other issues. While acknowledging that there are environmental nuisance risks from the project, the proponents consider the project will have a net social and environmental benefit to the region.

The DPEMP states (page 43):

"...the facility will be run to a high standard and will produce a valuable soil conditioner/fertilizer which will help reduce the reliance of Southern Tasmanian farmers on unsustainable chemical fertilizer inputs and provide a much needed injection of organic matter to already depleted soil supplies. The availability of quality organic inputs at an economically viable price may also facilitate the growth of the organic farming sector in the Huon area.

There is the very real possibility of the creation of employment opportunities in the municipality, both at the facility and from possible value adding such as bagging the finished product and/or bulk compost spreading in the already thriving local horticultural and grazing industries."

#### Public and agency comment

No public or agency representations were received in relation to social and economic issues.

#### Evaluation

Composting of wastes is in line with the principles of the waste management hierarchy, where waste is reused or recycled rather than disposed of to a waste depot. The final product could be beneficial to local landowners engaged in agricultural/horticultural pursuits. The reduction of large trucks on local roads which currently transport salmon morts to the east coast would be a positive outcome for the local community, as would any further opportunities for employment. These aspects must be balanced with the potential risks of environmental nuisance (in particular, relating to odour) from the proposal. Close and ongoing engagement by the proponents with local residents would be a necessary aspect of the success of the proposal.

#### Conclusion

No specific commitments are made in the DPEMP in relation to social and economic issues, nor are any permit conditions required.

Other information relating to waste management principles will be included in Schedule 3: Information of the permit:

- **OI1 Waste management hierarchy**
### Issue 11

**FIRE RISK**

#### Description of potential impacts

Fire can occur at composting facilities, originating from a variety of sources, including spontaneous combustion of methane from poorly managed operations, sparks from works undertaken on site, lightning strikes, cigarettes, bushfires, and arson.

#### Management measures proposed in DPEMP

Given the close proximity to forested areas, bushfire is considered by the proponents to be the greatest risk to the facility. However the DPEMP also asserts that there is a very minimal risk of fire originating from the operation itself due to the relatively high moisture content of most of the potential inputs and the high moisture contents required in the compost windrows to ensure the composting process occurs properly.

The DPEMP provides the following statements regarding fire management at the site (page 63):

- Careful attention will be paid to weather conditions and local fire activity during the summer months;
- There are three gravelled roads leading to the site from the east, north and north west and all could be used if there is a need for evacuation;
- The area outside the perimeter fence will kept well grazed or will be mown during the summer months;
- A pumping system from dams on site will enable staff to control any outbreak of fire in the unlikely event that it does occur; and
- All operational staff will undergo training in fire prevention and control as provided by the Tasmania Fire Service.

In addition, the following commitments are made in the DPEMP:

- **Commitment 32**: Moisture content of active composting windrows will be kept at or above 50%.
- **Commitment 33**: A portable fire fighting pump and hoses will be kept on site at all times.
- **Commitment 34**: Operational staff will be trained in fire prevention and control.

#### Public and agency comment

No public or agency representations were received in relation to fire risk.

#### Evaluation

The DPEMP commitments are considered appropriate for the reduction of risk of fire. The site is remote and access is restricted through the use of locked gates, reducing the risk of arson at the site. Proper management of the compost windrows (e.g. maintaining appropriate moisture and oxygen levels) will reduce the risk of spontaneous combustion. Standard condition OP3 in relation to fire management will be required to be complied with.

#### Conclusion

The proponent will be required to comply with the relevant DPEMP commitments summarised above. The proponent will be required to comply with the following standard (generic) conditions:

- **G8** Commitments
- **OP3** Fire management
### DECOMMISSIONING AND REHABILITATION

#### Description of potential impacts

Inadequate closure planning may result in products, feedstocks, contaminated products, or residues remaining on site, poor or no rehabilitation/revegetation/stabilisation of working areas, all potentially causing ongoing environmental nuisance or harm.

#### Management measures proposed in DPEMP

The proponents state in the DPEMP (page 69) that in the unlikely event that it is decided to discontinue processing the company’s waste at this site, a notice of intent would be issued to the EPA as soon as the situation arose. At this point a site rehabilitation plan would be developed by the proponent in consultation with the Huon Pastoral Company (property owner) and be submitted to the EPA for approval. That plan would cover:

- The future intended uses for the site.
- Provision for the removal of any stored leachate and decommissioning of the leachate collection system.
- Given that the site was no longer required as a hard stand for future usage it would be ripped to provide drainage and re-surfaced with a loam substrate and sown to pasture.
- All unwanted capital works or structures would be removed.

#### Public and agency comment

No public or agency representations were received in relation to decommissioning and rehabilitation.

#### Evaluation

The proponent’s proposed actions in relation to decommissioning and rehabilitation are considered adequate. Standard permit conditions in relation to decommissioning and rehabilitation of waste management facilities will be included in the permit.

#### Conclusion

The proponent will be required to comply with the following standard (generic) conditions:

- **DC1** Temporary suspension of activity
- **DC2** Notification of cessation
- **DC3** DRP Requirements
- **DC4** Rehabilitation following cessation
<table>
<thead>
<tr>
<th>Issue 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAFFIC AND TRANSPORT</td>
</tr>
</tbody>
</table>

**Description of potential impacts**

Traffic moving to and from the site may create nuisance (noise and/or dust) for residents along transport routes. Any increase in heavy vehicle movements can detract from the safety and amenity of an area. Should an accident occur with a vehicle carrying salmon mortalities, there is a high risk of environmental harm should morts spill onto roads and into waterways.

**Management measures proposed in DPEMP**

One delivery of morts will occur every 2 to 3 days in winter, and up to 2 deliveries of morts per day in summer. This is most likely to be via Barry’s Road (“Access route #1” in Appendix 1 of the DPEMP; also Figure 1 of this report). Less frequent and irregular deliveries of wood input materials, and transport of finished compost product, will use larger vehicles (i.e. 8 – 20 yard truck). Larger vehicle movements are more likely to come to the site via the Glendevie Road (Police Point Road) (Access route #2, Figure 1 of this report) as it is the shorter route from most wood supply points, although alternative access may be via Barry’s Road during wet weather. All traffic movements will be during daylight hours.

DPEMP Commitment 24 is made in relation to noise (see Issue 2). The proponents state that there is likely to be a positive benefit in regards to traffic from this proposal, given the greatly reduced distance for transporting morts, compared to the existing practice of morts being transported to Triabunna.

**Public and agency comment**

One public representation was received regarding access to the compost facility via Barry’s Road (referred to in the DPEMP as “Access route #1” (via Esperance Coast Road), and concerns regarding dust, odour and noise (addressed elsewhere in this document).

**Evaluation**

The proponent states that vehicle movements to and from the facility will be kept to a minimum. In regards to concerns regarding transport on Barry’s Road (“Access route #1”), this road will be used mainly by light vehicles only, with some occasional exceptions. The proponent has indicated that ongoing engagement with local residents regarding issues relating to operation of the compost facility is planned.

Reduction of large trucks on local roads currently transporting waste to the east coast is considered to be of benefit to local residents and road users.

**Conclusion**

The proponent will be required to comply with the following standard (generic) condition:

G8 Commitments
Huon Aquaculture Company – Fish Waste Composting Facility, near Police Point
Summary of public representations and agency comments

In the following tables, ‘DPEMP’ means the Development Proposal and Environmental Management Plan, Huon Aquaculture Company P/L, Police Point, Fish Waste Composting Facility, August 2013, by S Cruickshank, as submitted with Development Application to Huon Valley Council 27 September 2013.

A. Public representation details

<table>
<thead>
<tr>
<th>Issue</th>
<th>Comment</th>
<th>Further information required by EPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trucks entering and leaving via Barrys Road</td>
<td>Concerns regarding noise, dust and potential smells as trucks drive by property which runs alongside Barrys Road. Would prefer if other two access roads were used rather than Barrys Road. Seeking assurance that Barrys Road will not be used as an access road to the facility.</td>
<td>It is understood from the DPEMP that Barrys Road (Access route #1 from Appendix 1 of the DPEMP) will be used for transporting morts from Hideaway Bay to the compost facility, and that wood inputs are likely to come via Access route #2. Provide comment on how potential noise, dust and odour issues associated with transportation of morts can be managed and minimised while travelling via Barrys Road (Access route #1) and other access routes when near residences, whether alternating use of different access routes is a possibility, and consider and discuss options for maintaining open lines of communication with residents/property owners along transport route(s) so that any issues that do arise can be quickly resolved.</td>
</tr>
</tbody>
</table>
### B. Referral agency and specialist comments

<table>
<thead>
<tr>
<th>DPEMP section / page</th>
<th>Comment</th>
<th>Further information required by EPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 2.2.1 and elsewhere</td>
<td>A permit for the 1.8 ML secondary leachate dam under the Water Management Act 1999 may be required under Part 8A of that Act.</td>
<td>For proponent’s information only. Council is required to refer the proposal to the Assessment Committee for Dam Construction under section 165F of the Water Management Act 1999; however proponents of dams may also initiate the process themselves.</td>
</tr>
<tr>
<td>Page 27, Section 2.2.4 – Production capacity</td>
<td>Quantities of fish morts and wood waste are inconsistent in text, in the table on p27 and table on p28 and it is difficult to follow discussion when it switches between tonnes and cubic metres. Eg. page 27 discusses 1,100 tonnes or 1,095 tonnes of fish (wet weight), but the table on p28, when added up, comes to approximately 640 cubic metres of morts. If it assumed that fish morts have a bulk density of 1 tonne per cubic metre, then the amounts are substantially different. Previsions discussions between the proponent and assessment officer (emails, 28/05/2013) concluded that the limit for the permit would be 2,400 tonnes per annum of compost produced, however this is not reflected in the DPEMP. The DPEMP discusses an estimated volume of 1,500 cubic metres of finished compost per annum, which when using a generally accepted bulk density of finished compost of 600 kg/cubic metre, results in a finished product weight of approximately 900 tonnes per annum.</td>
<td>Clarify quantities of inputs (fish morts and wood waste) and confirm expected maximum quantity of finished compost product to be produced (in tonnes per annum). Ensure consistency between quantities and units throughout the document and between DPEMP and odour impact study (Appendix 12). There may be implications for the odour modelling exercise should quantities change substantially and this should be factored in to any decisions made based on the final quantities to be produced at the site.</td>
</tr>
<tr>
<td>Page 47-48</td>
<td>Maceration of fish morts prior to incorporation into windrows may be a final requirement of the EPA’s conditions.</td>
<td>Are there facilities at Hideaway Bay for macerating morts prior to taking to site and incorporating into windrows?</td>
</tr>
<tr>
<td>Section 4.3.1 and elsewhere.</td>
<td>Odours from sources other than from windrows have not been addressed in any great detail in the DPEMP and have not been considered as a factor in the odour impact study.</td>
<td>Consider additional management commitments in regards to management of odour from leachate ponds, vehicles moving around on site, general housekeeping/site hygiene, etc.</td>
</tr>
</tbody>
</table>
| Section 4.4 | The Policy and Conservation Assessment Branch of DPIPWE advise the following:  
- Provided that measures outlined in the DPEMP to minimise attraction of scavengers to the site are implemented, it is considered unlikely that the development will have an impact on species listed under the Threatened Species Protection Act 1995. | For proponent’s information only. |
<table>
<thead>
<tr>
<th>DPEMP section / page</th>
<th>Comment</th>
<th>Further information required by EPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• It is recommended that weeds on the site be managed to minimise the potential for weed propagules to be exported from the site in the final product.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 3  Permit Conditions – Environmental
PERMIT PART B
PERMIT CONDITIONS - ENVIRONMENTAL No. 8827

Issued under the Environmental Management and Pollution Control Act 1994

Applicant: HUON AQUACULTURE GROUP PTY LTD
ACN 114 456 781
961 ESPERANCE COAST RD
GEEVESTON TAS 7116

Activity: The operation of a composting facility (ACTIVITY TYPE: Resource Recovery)
HUON AQUACULTURE COMPOSTING OPERATION, 1318 ESPERANCE COAST RD
SURVEYORS BAY TAS 7116

The above activity has been assessed as a level 2 activity under the Environmental Management and Pollution Control Act 1994.

Acting under Section 25(5)(a)(i) of the EMPCA, the Board of the Environment Protection Authority has required that this Permit Part B be included in any Permit granted under the Land Use Planning and Approvals Act 1993 with respect to the above activity.

Municipality: HUON VALLEY
Permit Application Reference: DA-155/2013
EPA file reference: 238482

Date conditions approved: 23 JUN 2014

Signed: CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY

23 JUN 2014
DEFINITIONS

Unless the contrary appears, words and expressions used in this Permit Part B have the meaning given to them in Schedule 1 of this Permit and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Permit Part B, the EMPCA prevails to the extent of the inconsistency.

ENVIRONMENTAL CONDITIONS

The person responsible for the activity must comply with the conditions contained in Schedule 2 of this Permit Part B.

INFORMATION

Attention is drawn to Schedule 3, which contains important additional information.
# Table Of Contents

Schedule 1: Definitions .................................................................................................................. 5  
Schedule 2: Conditions .................................................................................................................. 7  
  Maximum Quantities .................................................................................................................... 7  
    Q1 Regulatory limits ................................................................................................................ 7  
  General ........................................................................................................................................ 7  
    G1 Incident response ................................................................................................................. 7  
    G2 Access to and awareness of conditions and associated documents ......................... 7  
    G3 No changes without approval ............................................................................................ 7  
    G4 Change of responsibility .................................................................................................... 7  
    G5 Notification prior to commencement ................................................................................ 7  
    G6 Complaints register ........................................................................................................... 7  
    G7 EMP Operations ................................................................................................................. 8  
    G8 Commitments ...................................................................................................................... 8  
  Atmospheric ................................................................................................................................ 8  
    A1 Covering of vehicles ............................................................................................................. 8  
    A2 Control of dust emissions .................................................................................................... 8  
    A3 Odorous gases ...................................................................................................................... 8  
    A4 Odour Management Plan .................................................................................................... 9  
  Construction ............................................................................................................................... 9  
    CN1 Minimum design requirements for working surfaces ...................................................... 9  
    CN2 Minimum design requirements for leachate storage systems ........................................ 10  
  Decommissioning And Rehabilitation ..................................................................................... 10  
    DC1 Temporary suspension of activity .................................................................................... 10  
    DC2 Notification of cessation .................................................................................................. 10  
    DC3 DRP requirements ............................................................................................................. 10  
    DC4 Rehabilitation following cessation ................................................................................ 10  
  Effluent Disposal ....................................................................................................................... 11  
    E1 Perimeter drains ................................................................................................................... 11  
    E2 Stormwater ........................................................................................................................ 11  
    E3 Stormwater to be excluded ................................................................................................. 11  
    E4 Contamination of stormwater ............................................................................................ 11  
    E5 Leachate management ........................................................................................................ 11  
  Hazardous Substances ............................................................................................................. 12  
    H1 Storage and handling of hazardous materials ................................................................. 12  
    H2 Spill kits .............................................................................................................................. 12  
  Monitoring .................................................................................................................................. 12  
    M1 Compost windrow monitoring ............................................................................................ 12  
  Noise Control ............................................................................................................................. 12  
    N1 Mobile woodchipper operation .......................................................................................... 12  
  Operations .................................................................................................................................. 13  
    OP1 Hours of operation ............................................................................................................ 13  
    OP2 Vehicle wash facilities ...................................................................................................... 13  
    OP3 Fire management .............................................................................................................. 13  
    OP4 Site staff ............................................................................................................................ 13  
    OP5 Perimeter fencing ............................................................................................................. 13  
    OP6 Compost windrows .......................................................................................................... 13  
    OP7 Prevention of removal of salmon carcasses from windrows by wildlife ..................... 13  
    OP8 Green waste ...................................................................................................................... 13  
    OP9 Permitted waste types ....................................................................................................... 14  
    OP10 Stockpiling of salmon carcasses prohibited ................................................................. 14
OP11 Emergency cover for windrows ................................................. 14
OP12 Weed management ............................................................. 14
Waste Management ................................................................. 14
WM1 Controlled waste transport ................................................ 14
WM2 Record keeping ............................................................... 14
Schedule 3: Information ............................................................ 15
Legal Obligations .................................................................... 15
LO1 EMPCA ........................................................................... 15
LO2 Storage and handling of Dangerous Goods, Explosives and dangerous substances ............................................. 15
LO3 Aboriginal relics requirements .......................................... 15
Other Information ................................................................... 16
OIL Waste management hierarchy ........................................... 16
OL2 Notification of incidents under section 32 of EMPCA ........ 16

Attachments
Attachment 1: Location map (modified: 05/06/2014 15:42) .................. 1 page
Attachment 2: DPEMP Commitments (modified: 05/06/2014 15:43) .......... 5 pages

CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY 23 JUN 2014
Schedule 1: Definitions

In this Permit Part B:-

Aboriginal Relic has the meaning described in section 2(3) of the Aboriginal Relics Act 1975.

Activity means any environmentally relevant activity (as defined in Section 3 of EMPCA) to which this document relates, and includes more than one such activity.

Authorized Officer means an authorized officer under section 20 of EMPCA.

Classification And Management Of Contaminated Soil For Disposal means the document Information Bulletin No. 105 Classification and Management of Contaminated Soil for Disposal published by the Department of Primary Industries, Parks, Water and Environment in November 2012, and includes any subsequent versions of this document.

Commissioning means the testing of major items of equipment and is taken to be completed 1 month after notification of the commencement of commissioning, as required by these conditions, or on a date otherwise specified in writing by the Director.

Controlled Waste has the meaning described in Section 3(1) of EMPCA.

Director means the Director, Environment Protection Authority holding office under Section 18 of EMPCA and includes a person authorised in writing by the Director to exercise a power or function on the Director's behalf.

DRP means Decommissioning and Rehabilitation Plan

Environmental Harm and Material Environmental Harm and Serious Environmental Harm each have the meanings ascribed to them in Section 5 of EMPCA.

Environmental Nuisance and Pollutant each have the meanings ascribed to them in Section 3 of EMPCA.

Environmentally Hazardous Material means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.

Feedstocks means the materials used as inputs into the composting process. In this case, feedstocks are restricted to salmon carcasses from Huon Aquaculture's Hideaway Bay facility, and wood waste (sawdust, woodchips).

Leachate means any liquid that is either released by or has percolated through waste.

Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Stormwater means water traversing the surface of the land as a result of rainfall.

CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY

23 JUN 2014
The Land means the land on which the activity to which this document relates may be carried out, and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The Land falls within the area defined by:

- Land title references 232794/1, 40855/1, and 237916/1 within the property at 1318 Esperance Coast Road, Surveyors Bay (Property identifier 3057387); and
- as further delineated at Attachment 1.

Uncontaminated Green Waste means the non-putrescible vegetative portion of the waste stream such as garden clippings, timber, agricultural, forestry and crop materials and natural fibrous organic and vegetative materials, and not contaminated with weeds, litter or food waste.

Waste has the meaning ascribed to it in Section 3 of EMPCA.

Wastewater means spent or used water (whether from industrial or domestic sources) containing a pollutant and includes stormwater which becomes mixed with wastewater.

Weed means a declared weed as defined in the Weed Management Act 1999.

Wood Waste means any planings, shavings, sawdust, woodfibre and dockings, but does not include treated timber or timber contaminated with other wastes.

Working Surfaces means storage areas, active composting surfaces, and associated access roads.
Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits
  1 The activity must not exceed the following limits (annual fees are derived from these figures):
     1.1 2,400 tonnes per year production of compost or mushroom substrate.

General

G1 Incident response
If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G2 Access to and awareness of conditions and associated documents
A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G3 No changes without approval
  1 The following changes, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the activity if such changes have been approved in writing by the EPA Board following its assessment of an application for a permit under the Land Use Planning and Approvals Act 1993, or approved in writing by the Director:
     1.1 a change to a process used in the course of carrying out the activity; or
     1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity; or
     1.3 a change in the quantity or characteristics of materials used in the course of carrying out the activity.

G4 Change of responsibility
If the person responsible for the activity ceases or intends to cease to be responsible for the activity, he or she must notify the Director in writing of the full particulars of any person succeeding him or her as the person responsible for the activity.

G5 Notification prior to commencement
The Director must be notified in writing of the commencement of operations at least 14 days before that occurs.

G6 Complaints register
  1 A public complaints register must be maintained and made available for inspection by an Authorized Officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:
1.1 the time at which the complaint was received;
1.2 contact details for the complainant (where provided);
1.3 the subject-matter of the complaint;
1.4 any investigations undertaken with regard to the complaint; and
1.5 the manner in which the complaint was resolved, including any mitigation measures implemented.

2 Complaint records must be maintained for a period of at least 3 years.

G7 EMP Operations

1 Within 15 months of date on which these conditions take effect, or by a date otherwise specified in writing by the Director, an Environmental Management Plan Operations ('EMP Operations') must be submitted to the Director.
2 The EMP Operations must detail prescriptions, consistent with these conditions, for the prevention or mitigation of environmental harm and environmental nuisance arising from the activity.
3 In preparing the EMP Operations the person responsible must take into account environment related complaints, incidents and changes to the activity over the preceding 12 months.
4 The EMP Operations must include plans clearly showing the actual location of all infrastructure associated with the activity including buildings, machinery, roads, stockpiles and drainage controls. These plans must also depict the current and proposed future extent of disturbance associated with the activity.
5 The EMP Operations, as amended from time to time with the written agreement of the Director, must be implemented by the person responsible from the date of the Director's approval.

G8 Commitments
The activity must be carried out in accordance with the commitments contained in Attachment 2 unless otherwise specified in these conditions or unless otherwise approved in writing by the Director.

Atmospheric

A1 Covering of vehicles
Vehicles carrying loads containing material which may blow or spill must be equipped with effective control measures to prevent the escape of the materials from the vehicles when they leave The Land or travel on public roads. Effective control measures may include tarpaulins and load dampening.

A2 Control of dust emissions
Dust emissions from The Land must be controlled to the extent necessary to prevent environmental nuisance beyond the boundary of The Land.

A3 Odorous gases
The person responsible must institute such odour management measures as are necessary to prevent odorous gases causing environmental nuisance beyond the boundary of The Land.
A4 Odour Management Plan

1 A draft Odour Management Plan must be submitted to the Director within three (3) months of the date on which these conditions take effect or by a date specified in writing by the Director, and a final Odour Management Plan submitted to the Director within 12 months of commencement of site operations. The Odour Management Plan must provide detailed information relating to the potential sources of odour from the activity and must detail operational procedures as required to ensure compliance with these conditions.

2 The Odour Management Plan ('the Plan') must detail contingency management measures to prevent and mitigate odours if an unplanned event occurs. Unplanned events that must be addressed by the Plan include, but are not limited to:
   2.1 Incidents, accidents, and malfunctions of equipment that may cause the release of odour or leachate that does not comply with these conditions;
   2.2 Pipe ruptures leading to discharge of leachate to places other than the approved leachate collection ponds;
   2.3 Salmon mortality events that lead to unusually high quantities of salmon carcasses requiring composting;
   2.4 Unfavourable weather and climatic conditions which may affect aerobic conditions in compost windrows and may impact on schedules for turning or undertaking other appropriate management actions of compost windrows; and
   2.5 Presence of anaerobic conditions in leachate ponds.

3 The activity must be undertaken in accordance with an approved Odour Management Plan.

4 The Odour Management Plan must include communication procedures for ensuring that the general public and relevant government agencies are informed of any unplanned event to the extent necessary to allow them to take precautions against adverse odour impacts.

5 As far as is reasonable and practicable, the Odour Management Plan must include contact details for all neighbouring landowners that may be impacted by an unplanned event and must be kept up-to-date by the person responsible.

6 The person responsible must take all reasonable and practicable measures to ensure that personnel, including contractors, carry out their duties in accordance with the Plan.

Construction

CN1 Minimum design requirements for working surfaces

1 The working surfaces on The Land must be:
   1.1 bunded and graded sufficiently to prevent run-on and run-off of surface water;
   1.2 designed and constructed from an inert low-permeability material such as compacted clay, modified soil, asphalt or concrete over a compacted base; and
   1.3 able to support all structures, machinery and vehicles to allow access to all parts of The Land irrespective of weather conditions.

2 The working surfaces must have a leachate barrier system consisting of:
   2.1 as a minimum, a clay or modified soil liner consisting of at least 600 mm of recompacted clay; or
   2.2 a natural geological barrier that is proven by competent geotechnical investigations to provide a secure barrier between the groundwater, soil and substrata and the composting organics, equivalent to the 600 mm recompacted clay described in subsection 2.1 of this condition.
CN2  Minimum design requirements for leachate storage systems

1  Leachate must be collected and stored in a lined dam or in above-ground storage tanks.
2  Leachate dams must be capable of accepting run-off or leachate generated by any 1-in-20-year rainfall event without overflowing.
3  Leachate dams must, as a minimum, be constructed with:
   3.1 a clay or modified soil liner consisting of at least 900 mm of compacted clay; and
   3.2 side slopes not exceeding a gradient of one vertical to three horizontal.

Decommissioning And Rehabilitation

DC1  Temporary suspension of activity

1  Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.
2  During temporary suspension of the activity:
   2.1 The Land must be managed and monitored by the person responsible for the activity to ensure that emissions from The Land do not cause serious environmental harm, material environmental harm or environmental nuisance; and
   2.2 If required by the Director, the person responsible must prepare and implement a Care and Maintenance Plan to the satisfaction of the Director.
3  Unless otherwise approved in writing by the Director, if the activity on The Land has substantially ceased for 2 years or more, rehabilitation of The Land must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

DC2  Notification of cessation

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

DC3  DRP requirements

Unless otherwise approved in writing by the Director, a draft Decommissioning and Rehabilitation Plan (DRP) for the activity must be submitted for approval to the Director within 30 days of the Director being notified of the planned cessation of the activity or by a date specified in writing by the Director. The DRP must be prepared in accordance with any guidelines provided by the Director.

DC4  Rehabilitation following cessation

1  Following permanent cessation of the activity, and unless otherwise approved in writing by the Director, The Land must be rehabilitated including:
   1.1 stabilisation of any land surfaces that may be subject to erosion;
   1.2 removal or mitigation of all environmental hazards or land contamination, that might pose an on-going risk of causing environmental harm; and
   1.3 decommissioning of any equipment that has not been removed.
2  Where a Decommissioning and Rehabilitation Plan (DRP) has been approved by the Director, decommissioning and rehabilitation must be carried out in accordance with that plan.
Effluent Disposal

E1 Perimeter drains
1 Perimeter cut-off drains must be constructed at strategic locations on The Land to prevent surface run-off from entering the area used or disturbed in carrying out the activity. All reasonable measures must be implemented to ensure that sediment transported along these drains remains on The Land. Such measures may include provision of strategically located sediment fences, appropriately sized and maintained sediment settling ponds, vegetated swales, detention basins and other measures designed and operated in accordance with the principles of Water Sensitive Urban Design.
2 Drains must have sufficient capacity to contain run-off that could reasonably be expected to arise during a 1 in 20 year rainfall event. Maintenance activities must be undertaken regularly to ensure that this capacity does not diminish.

E2 Stormwater
1 Polluted stormwater that will be discharged from The Land must be collected and treated prior to discharge to the extent necessary to prevent serious or material environmental harm, or environmental nuisance.
2 Notwithstanding the above, all stormwater that is discharged from The Land must not carry pollutants such as sediment, oil and grease in quantities or concentrations that are likely to degrade the visual quality of any receiving waters outside the Land.
3 All reasonable measures must be implemented to ensure that solids entrained in stormwater are retained on The Land. Such measures may include appropriately sized and maintained sediment settling ponds or detention basins.

E3 Stormwater to be excluded
Stormwater must be prevented as far as practicable from mixing with compost windrows or wood waste stockpiles.

E4 Contamination of stormwater
1 In the event that stormwater becomes polluted by leachate, measures must be implemented immediately to prevent pollutants from discharging beyond the boundaries of The Land. Polluted stormwater may be either:
   1.1 transferred to the leachate collection system, providing that the leachate dam has adequate capacity; or
   1.2 irrigated over the compost windrows, providing that conditions within the windrows allow for addition of extra moisture; or
   1.3 removed to an approved Wastewater Treatment Plant.

E5 Leachate management
1 A leachate collection system must be managed to prevent leachate generated within compost windrows from polluting groundwater or surface waters.
2 Leachate on The Land must be managed such that:
   2.1 it is not discharged from The Land; and
   2.2 it does not cause an odour nuisance beyond the boundary of The Land; and
   2.3 human contact with leachate is minimised.
Hazardous Substances

H1 Storage and handling of hazardous materials
1 Unless otherwise approved in writing by the Director, environmentally hazardous materials held on The Land must be:
   1.1 located within impervious bunded areas, spill trays or other containment systems; and
   1.2 managed to prevent unauthorised discharge, emission or deposition of pollutants:
       1.2.1 to soils within the boundary of The Land in a manner that is likely to cause serious environmental harm;
       1.2.2 to groundwater;
       1.2.3 to waterways; or
       1.2.4 beyond the boundary of The Land.

H2 Spill kits
Spill kits appropriate for the types and volumes of materials handled on The Land must be kept in appropriate locations to assist with the containment of spilt environmentally hazardous materials.

Monitoring

M1 Compost windrow monitoring
1 Unless otherwise approved in writing by the Director, the following measurements must be taken at several locations along each compost windrow, and at different depths from the top and sides of the windrow, a minimum of 5 (five) days per week:
   1.1 Temperature; and
   1.2 Carbon dioxide and/or oxygen levels; and
   1.3 Moisture levels.
2 Details of equipment used for the measurements required under section 1 of this condition must be recorded.
3 Records of measurements obtained and related details in relation to sections 1 and 2 of this condition must be maintained for a minimum of three (3) years and must be made available to an Authorized Officer on request.

Noise Control

N1 Mobile woodchipper operation
1 Unless otherwise approved in writing by the Director, the operation of mobile woodchipping machinery on The Land is only permitted within the hours of 0900 to 1700 Monday to Friday, with no operations permitted on Saturdays, Sundays and Public Holidays that are observed Statewide (Easter Tuesday excepted).
2 Woodchipping undertaken on The Land using mobile woodchipping machinery is permitted solely for the purposes of chipping tree felling residues for use on The Land as a feedstock and/or daily cover for compost windrows.
3 The infeed chute of mobile woodchipping machinery used on The Land must be directed towards the south west at all times during operation.
4 Records of operation of mobile woodchipping machinery must be kept for a minimum of three (3) years and made available to an Authorized Officer on request.

CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY

23 JUN 2014
Operations

OP1 Hours of operation
1 Unless otherwise approved in writing by the Director, the composting facility must not be open for the reception of feedstock outside the hours of 0700 hours to 1700 hours Monday to Friday and 0730 hours to 1200 hours on Saturday.
2 Access to The Land must be through a gate that must be secured to prevent unauthorised access when The Land is unattended.

OP2 Vehicle wash facilities
Facilities must be provided for cleaning vehicles to remove waste and mud.

OP3 Fire management
1 Fire control measures on The Land must be to the satisfaction of the Tasmania Fire Service (TFS). Correspondence from the TFS indicating the suitability of fire control measures must be submitted to the Director within 6 months of the date on which these conditions take effect.
2 Fires occurring on The Land must be extinguished as soon as possible using all practical means available.
3 The lighting of fires on The Land is not permitted.
4 The person responsible must make all reasonable efforts to prevent unauthorised ignition of green waste stockpiles.

OP4 Site staff
While The Land is open for reception of feedstock, The Land must be attended by a person or persons whose duties must include supervising the management of feedstock deposition and incorporation into windrows, and ensuring compliance with these conditions.

OP5 Perimeter fencing
Unless otherwise approved by the Director, a 0.9-metre high stock- and wildlife-proof electrified fence must be constructed and maintained around areas that are actively being used for composting.

OP6 Compost windrows
Machinery capable of turning and covering compost windrows must be kept on The Land at all times. A person competent in operating the machinery must be available for an adequate period of time to turn and cover windrows on each day that delivery of salmon carcasses feedstock occurs.

OP7 Prevention of removal of salmon carcasses from windrows by wildlife
Measures must be implemented and maintained throughout the operational life of the composting facility to prevent disturbance of composting windrows by wildlife, and/or removal of salmon carcasses from composting windrows by wildlife.

OP8 Green waste
1 Green and wood waste feedstock stockpiles must be kept free from contamination and heavy wood (such as tree trunks, thick branches and stumps) and must be mulched on a regular basis. The mulch may be used for daily cover.
2 Green and wood waste feedstock stockpiles must be separated from compost windrows by a distance of no less than 20 metres.
3 Quantities of green and wood waste (carbon compost feedstock material) sufficient for four (4) weeks of composting must be maintained on The Land.
OP9 Permitted waste types

1 Unless otherwise approved by the Director, no wastes may be deposited or stored on The Land other than wastes of the following types:
   1.1 Salmon carcasses from Huon Aquaculture Company Pty Ltd Hideaway Bay operations; and
   1.2 Wood waste; and
   1.3 Uncontaminated green waste.

OP10 Stockpiling of salmon carcasses prohibited
The stockpiling of salmon carcasses on The Land at any time is prohibited. All salmon carcasses must be incorporated into windrows within two (2) hours of arrival at The Land, and windrows covered or turned as appropriate.

OP11 Emergency cover for windrows
Sufficient sawdust must be kept on The Land so that compost windrows can be covered to a depth of 300 mm should unforeseen events occur which result in odour causing environmental nuisance.

OP12 Weed management
The Land must be kept substantially free of weeds to minimise the risk of weeds being spread through the transport of products from The Land.

Waste Management

WM1 Controlled waste transport
Transport of controlled wastes to and from The Land must be undertaken only by persons authorised to do so under EMPCA or subordinate legislation.

WM2 Record keeping

1 A record of the following must be maintained and provided to an Authorized Officer on request:
   1.1 quantities of salmon mortalities (volume or weight) received on The Land and incorporated into compost windrows;
   1.2 quantities and a description of wood waste incorporated into compost windrows;
   1.3 descriptions of actions undertaken in relation to compost windrow management (including, but not limited to, establishment of new windrow, windrow turning, covering of windrows, irrigating of windrows), leachate pond maintenance, and use of mobile woodchipping equipment; and
   1.4 monitoring for temperature, carbon dioxide/oxygen levels, and moisture levels as required by Condition M1.

2 The records required under section 1 of this condition must be maintained for a period of at least three (3) years.
Schedule 3: Information

Legal Obligations

LO1  EMPCA
The activity must be conducted in accordance with the requirements of the *Environmental Management and Pollution Control Act 1994* and Regulations thereunder. The conditions of this document must not be construed as an exemption from any of those requirements.

LO2  Storage and handling of Dangerous Goods, Explosives and dangerous substances
1  The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:
   1.1  *Work Health and Safety Act 2012* and subordinate regulations;
   1.2  *Explosives Act 2012* and subordinate regulations; and
   1.3  *Dangerous Goods (Road and Rail Transport) Act 2010* and subordinate regulations.

LO3  Aboriginal relics requirements
1  The *Aboriginal Relics Act 1975*, provides legislative protection to Aboriginal heritage sites in Tasmania regardless of site type, condition, size or land tenure. Section 14(1) of the Act states that; Except as otherwise provided in this Act, no person shall, otherwise than in accordance with the terms of a permit granted by the Minister on the recommendation of the Director of National Parks and Wildlife:
   1.1  destroy, damage, deface, conceal or otherwise interfere with a relic;
   1.2  make a copy or replica of a carving or engraving that is a relic by rubbing, tracing, casting or other means that involve direct contact with the carving or engraving;
   1.3  remove a relic from the place where it is found or abandoned;
   1.4  sell or offer or expose for sale, exchange, or otherwise dispose of a relic or any other object that so nearly resembles a relic as to be likely to deceive or be capable of being mistaken for a relic;
   1.5  take a relic, or permit a relic to be taken, out of this State; or
   1.6  cause an excavation to be made or any other work to be carried out on Crown land for the purpose of searching for a relic.
2  If a relic is suspected and/or identified during works then works must cease immediately and the Tasmanian Aboriginal Land and Sea Council and the Aboriginal Heritage Tasmania be contacted for advice before work can continue. In the event that damage to an Aboriginal heritage site is unavoidable a permit under section 14 of the *Aboriginal Relics Act 1975* must be applied for. The Minister may refuse an application for a permit, where the characteristics of the relics are considered to warrant their preservation.
3  Anyone finding an Aboriginal relic is required under section 10 of the Act to report that finding as soon as practicable to the Director of National Parks and Wildlife or an authorized officer under the *Aboriginal Relics Act 1975*. It is sufficient to report the finding of a relic to Aboriginal Heritage Tasmania to fulfil the requirements of section 10 of the Act.
Other Information

OI1 Waste management hierarchy

1 Wastes should be managed in accordance with the following hierarchy of waste management:

1.1 waste should be minimised, that is, the generation of waste must be reduced to the maximum extent that is reasonable and practicable, having regard to best practice environmental management;

1.2 waste should be re-used or recycled to the maximum extent that is practicable; and

1.3 waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

OI2 Notification of incidents under section 32 of EMPCA

Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning 1800 005 171 (a 24-hour emergency telephone number).
ATTACHMENT 2: DPEMP Commitments

5.1 Construction and Infrastructure (see section 4.1)

The construction phase will be overseen by consultants, including Simon Cruickshank and the HAC environmental scientist Dominic O'Brien. Construction is scheduled to take place once a permit to carry out a level 2 activity has been received.

1. The hardstand base will be compacted road base over compacted parent clay at a minimum of 300mm. Compaction by heavy vibrating roller or 20 t excavator will be to 98% of maximum density.

2. The ‘active’ composting hardstand area will be graded to no less than 2 and no more than 10% to ensure all leachate and storm water is directed to the leachate collection ponds.

3. Core construction of both the primary and secondary leachate collection ponds will be of suitable clay won from a soil pit (as identified by the SFM Soil Solutions report) during the expansion of the trial site.

Perimeter Fence

4. The entire perimeter of the site will be fenced with stock and wildlife proof fencing.

5. The perimeter fence will be regularly inspected and maintained to ensure the site does not become a transmission point for Tasmanian Devil facial tumour disease.

Machinery

6. Replacement machinery will be brought on site if a breakdown occurs.

7. Fish mortalities delivery will be suspended while mitigation procedures (see section 4.1) are implemented.

8. In the event that mortalities cannot be processed at the compost facility, they will be stored at cool store facilities at Hideaway bay or be sent to an off site waste management (composting) facility.
Washdown

9. The wash down area will be a 100mm reinforced concrete slab with raised sides. It will have a water collection pit that will be piped to the leachate collection drains which run to the primary leachate pond.

5.2 Water Management (see section 4.2)

10. All storm water emanating from the hill behind the facility will be diverted away by a surface water channel.

11. All surface water from the site will be treated as leachate and will be directed by dish drains and bund walls to the leachate collection ponds.

12. Water from the smaller primary leachate collection pond will be pumped back to the active composting windrows year round. It is anticipated that nutrients and fish derived lipids will settle in this pond.

13. Lipid or fat concentrations will be skimmed or trapped at the primary leachate collection pond and removed to the active composting windrows for processing.

14. The secondary leachate pond will have a minimum water holding capacity of 1.8 ML to allow for storage of any over flow from the primary leachate pond during periods of high rainfall or storm events.

15. Both leachate collection ponds will be lined with suitable clay from the area above the compost hardstand as identified in the SFM Soil Solutions report.

5.3 Air Emissions (see section 4.3)

16. Odour control will be the responsibility of the site operator and will be overseen by the HAC Environmental Scientist.

17. Windrow construction will be carried out to compost recipes which are designed to balance the carbon to nitrogen ratio of inputs so as to reduce ammonia production.
18. Daily monitoring for temperature, CO2 levels and moisture will ensure an ideal windrow environment is maintained and determine the windrow aeration program on a daily basis to reduce the development of anaerobic odours.

19. Windrows will be aerated whenever CO2 is above 12% and/or temperatures reach 60° C. Windrow moisture levels will be kept between 50-60%.

20. All volatile inputs (fish morts) will be included into windrows as soon as they are delivered.

21. Odour mitigation actions will be activated in the unlikely event of an odour complaint, or upset conditions, these include:

Not turning active windrows when prevailing wind direction is towards the nearest residences.
Increasing sawdust component of recipe to create an odour blanket or covering with geo-fabric
A combination of the above actions

22. Quarterly odour audits will be undertaken at nearby residences during the first year of operation.

23. Dust suppression will be achieved by avoiding dry materials handling during periods of high wind and water spraying of roadways will be employed where necessary. Basic OH and S procedures will be followed and machinery with air-conditioned enclosed cabs will be provided.

24. Noise generation will not be greater than that of the surrounding agricultural activities.

5.4 Flora and Fauna (see section 4.4)

25. Coordination of fish waste deliveries with the presence on site of operational staff to ensure the waste can be immediately processed to reduce both odour generation and attraction of avifauna.

26. Immediate incorporation of fish mortalities into active compost windrows.

27. Cover fish waste in the first windrow with 0.6 to 0.9m³ of sawdust to limit attraction of avifauna.
28. Mammals will be prevented entry to the site through the installation of the specially designed perimeter fence.

5.5 Hazardous Materials (see section 4.5)

29. Diesel re-fuelling will be carried out away from compost operations at a re-fuelling area that will contain a dedicated spill kit.

30. Any oil spills will be cleaned up with an appropriate hazardous clean-up kit to be kept on site.

31. All empty fuel and oil containers will be removed from the site and disposed of appropriately.

5.7 Fire Mitigation (see section 4.7)

32. Moisture content of active composting windrows will be kept at or above 50%.

33. A portable fire fighting pump and hoses will be kept on site at all times.

34. Operational staff will be trained in fire prevention and control.

5.8 Public Health and Safety (see section 4.8)

35. Those nearest neighbours identified through the DPEMP will be informed of all aspects of the development prior to the public release of the Level 2 activity application, and will also be consulted at 6 monthly intervals when operations are underway (after year 1).

36. There will be no public access to the composting facility unless they are invited to do so by Huon Aquaculture Company management.

37. All operational staff will be instructed in basic hygiene awareness and be trained in compost specific aspects of organic waste management.
38. Compost turning equipment will be fitted with fully enclosed air-conditioned cabs and respirators will be made available to staff if required and/or desired.

39. Finished product will be tested for organic and inorganic contaminants and human pathogens E. coli, Salmonella, Faecal Coliforms and Listeria for every 100 dry tonnes of production.

5.9 Land (see section 4.9.2)

40. Compost will be produced in accordance with the Australian Standard AS 4454-2012 Composts, soil conditioners and mulches.

5.10 Heritage (see section 4.10)

41. Aboriginal heritage officers will be alerted and construction halted if any sign of aboriginal activity is discovered during the development of the site.

5.11 Social and Economic impacts

5.12 Monitoring (see section 4.12)

42. Records of mortalities volumes will be kept by the company for its own internal monitoring and these will also track the exact volume of waste being processed at the site.

43. A record will be kept of all outgoing product and its destination and intended application.