

PALMERS ISLAND MULLOWAY Pty Ltd.

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

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Index

- Introduction
- Description and likelihood of hazards
- Pre-emptive actions to be taken
- Inventory of pollutants
- Safety equipment
- Contact details
- Communicating with neighbours and the local community
- Minimising harm to persons on the premises
- Maps
- Actions to be taken during or immediately after a pollution incident
- Staff training

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Introduction

In 2008, Palmers Island Mulloway Pty Ltd purchased an existing prawn farm with the purpose of growing Mulloway, (an estuarine species renowned for its eating quality). Palmers Island Mulloway Pty Ltd has 12 x 1ha ponds is found a short distance from the mouth of the Clarence River. Like prawns, mulloway is a marine species and water is exchanged at the top of the high tides to ensure clean ocean water. Very few changes were needed to be done to convert the farm from a prawn farm to a fish farm as the basic requirement to maintain good water quality applies for both species.

However, Palmers Island Mulloway harvest fish all year round rather than a short harvesting season like prawns. Therefore ponds are emptied and dried between generations of stock evenly over 12 months as opposed to all 12 ponds emptied in 2-3 months in later summer/early autumn.

A brief description of operations is as follows: Water is pumped from the river at high tide to achieve water with highest salinity. Pumping usually only somewhere between 3-4 hours a day depending on the conditions in the river. This constitutes a small 2-3% exchange a day for each pond. The water from the ponds over flow into a drain that surrounds the farm. This water ends up in the settlement pond where oyster mesh walls increases the distance the water has to travel before it is released into the river.

Palmers Island Mulloway is required by EPA to conduct independent water samples from both the settlement pond, (where water is released back into the river) and the river itself once a month. The following Parameters are tested:

- Suspended solids
- pH
- Bio-Oxygen demand
- Phosphorus
- Nitrogen

In the four years of operation, Palmers Island Mulloway has not had a water sample that has been outside the parameters they have been set. In many cases the water that is being return to the river is in a better state than the river itself.

The fact aquatic life is living and thriving in our ponds means any environmental incident that would have any effect on the environment is extremely unlikely.

Description and likelihood of hazards

The description and likelihood of hazards is difficult to define. Basically sea water is pumped onto the farm into ponds where aquatic life is thriving. It is in our best interest to keep the environment the fish live in the best possible conditions so constant water monitoring is performed on the farm on a regular basis. The only chemical that is added to the water before filling is ag lime. Ag lime is an approved product for aquaculture and has no withholding periods. The function of the ag lime is to act like a buffer for the pH. With a higher percentage of carbonate in the water keeps the pH between 7.8 and 8.5 from morning and afternoon.

After the ponds are filled, a small amount of malaises is added daily to help water break down ammonia and nitrates. Again there is no withholding period for Malaises and is non toxic to humans or the environment.

In the event of a disease outbreak, water may be treated with Formalin. Formalin is a registered product for aquaculture with a very short active life. The withholding period for the product, (fish) is two weeks but for releasing water, the active component of formalin has completed broken down within 24 hours. Water is quarantined when treatment is necessary and water is only released to the drain when it is sure that the disease outbreak has been eliminated or the formalin has completely dispersed.

Diseases that affect fish are in the water all the time (in the river and the oceans). It is only when the fish are stressed or have a lower immune system that they become vulnerable. Again with careful water monitoring, keeping the animal's environment in the best way eliminates the risk of disease.

All disease outbreaks need to be reported to NSW Fisheries. Part of our licence with NSW fisheries includes a section on Disease Management. See NSW fisheries website for more information

From an environmental point of view, with regular water exchanging, the risk of any substantial impact on the environment is zero.

Hazards that might occur but with no impact on the environment might be fish kill due to low oxygen.

Warm water holds less oxygen than cold water so in summer aerators are used to oxygenate the water at night, (when algae and plant life are not photosynthesising producing oxygen in the water).

A fish kill due to low oxygen usually results when there is some sort of mechanical failure or achieving stocking densities that unachievable. The likelihood of such an event happening is low.

In the unlikely event fish do die due to low oxygen, it is in our best interest to remove these fish before they rot and pollute the water for the rest of the fish in the pond. Dead fish are buried on the farm in deep burial well above the high water mark.

The pond should recover quickly during the day when plant life starts producing oxygen again. Water is not released from the pond but even if it was, this low oxygenated water does not end up in the river. Rather it mixes in the drain with other water and spends considerable time in the settlement pond before release. Water can re-oxygenated very quickly during the day and any water released to the river is nowhere near a critical level.

When the pond is empty the material left behind in the centre is spread out over the bottom to allow the sun to cook it dry. When this mound of biomaterial gets a little large, it is physically removed from the pond bottom with front end loaders. As the material is high in nutrients, it makes for a great fertiliser and is spread around the farmer usually in the gardens around the house.

Fuel is kept in plastic containers inside a box in the sheds away from the river with no chances of spills leaving the shed. Old oil from oil changes of vehicles are stored and taken to the tip to be disposed of properly. Herbicides for weeds are kept in a separate room in the feed shed with no chances of leaking outside of the shed.

Staff are required to stay out of a quarantined pond. There are apparently some fish diseases that can be transferred to humans but are highly unlikely. The real reason to stay out of the ponds is to minimise the risk of spreading the disease to other ponds. In this regard there is no human risk from an environment hazardous event.

Pre-emptive actions to be taken

Obviously low oxygen is to be avoided as loss of fish is loss of income. The following are steps already in place to avoid low oxygen events from occurring:

- Daily morning and afternoon water tests. This shows the lowest and highest oxygen levels in each pond over a day.
- If ponds start to become low in the mornings, increased aeration during the night is turned on a increase in water exchange for that pond until conditions improve
- If algae blooms start to get too thick this can lead to higher oxygen demand. Daily water tests indicate ponds with thick blooms and regular exchanges keeps this blooms thin and the risk low.
- If sick or dead fish are noticed in a pond. That pond is instantly quarantined and test is conducted to determine cause of death or the reason there are sick fish. No water is released until it is safe. NSW Fisheries is notified if any potential disease is notable.

During times of flood, no water is pumped onto the farm as the water on the farm is in a better state than the river. River water during flood is low in oxygen, high in nutrients and only leads to water quality problems.

Regular water exchanges utilising water at the peak of the high tide is the best line of defence for any hazardous. Palmers Island Mulloway keep pumping records as part of our EPA licence and therefore can show that we pump almost every day of the year unless the river is in flood or there is a big fresh.

Inventory of pollutants

There are not many pollutants stored on the farm and most are covered in the **‘Occupational Work Health and Safety’** manual for the farm. In this document, you will find material safety data sheets and correct safety equipment to be worn when handling each material. The following are a list of pollutants that are relevant to this document:

- Ag Lime. Stored in feed shed in 20kg bags. Risk to the environment zero. Staff follow the occupational work health and safety document when handling material.
- Diesel and Unleaded Fuel. Stored in the feed shed. Risk to the environment low. Staff follow the occupational work health and safety document when handling material
- Formalin. 44gal drums. Stored in a safe environment in the hatchery. Risk for the environment low. Staff follow the occupational work health and safety document when handling material
- Herbicide (Round up). Stored in Feed shed. Risk to the environment low. Staff follow the occupational work health and safety document when handling material

Safety Equipment

A full list of safety equipment is outlined in the ‘Occupational Work Health and Safety’ Manual located in the office. In this document, every part of operations is covered with a detailed description that includes the safe handling of chemicals and the safety gear available and what should be worn during each type of activity is performed.

Emergencies procedures are also covered in the ‘Occupational Work Health and Safety’ manual.

Contact Details

On Site Manager:

In the unlikely event there is a potential environmental concern, the on site manager should be informed straight away so he can implement a plan and inform government organisations. His contact details are:

Andrew Carroll
Mobile: 0421 500 611
House phone: (02) 66467710
Work phone: (02) 6646 7717

In the unlikely event that there is some environment hazard several organisations need to be informed including:

EPA:

Phone 131 555

Fire Services:

Phone: 000

NSW Work Cover:

Phone 131 050

Local Council:

Phone: (02) 6643 0200

NSW Ministry of Health:

Phone: 02 9391 9000

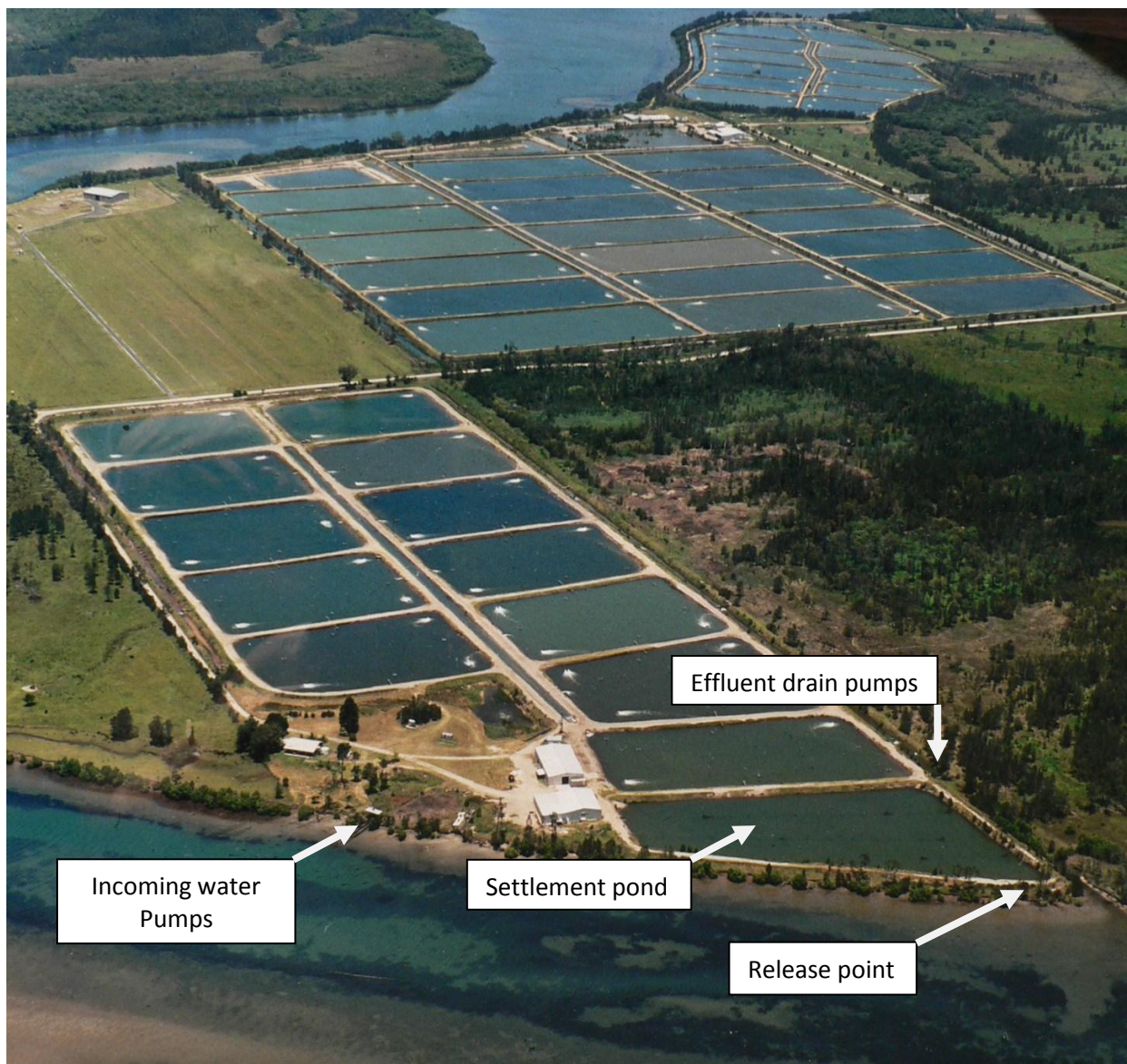
Communicating with neighbours and the local community

If any incident affects neighbours, all will be notified by either phone calls or visiting them. The threat to human health is zero to neighbours.

Minimising harm to persons on the premises

The risk of harm to persons due to an environmental incident on the premises is zero.

Maps



Actions to be taken during or immediately after a pollution incident

Whatever the incident or perceived risk the on site manager should be advised straight away.

Isolation of pond water:

In the unlikely event that water is contaminated with anything that might be harmful to the environment. Water on the farm can be quarantined in one of three places. First of all, water is not released from the ponds before it is clear of any risk to the environment. Secondly, the drain can be remain isolated if it is thought that drain water might be a risk to the environment and thirdly, the settlement pond can be isolated if there is any risk of contamination. The order to isolate is:

- Pond
- Drain
- Settlement pond

No water is released back to the river before the on site manager declares it free of any pollutants. It is very unlikely that water is contaminated to a point where it would have any impact on the environment. It is in our best interest to keep the pond water in the best state possible to promote growth and avoid disease.

Spills

Chemicals and fuels are kept in sheds. The risk of a spill escaping from the shed is low. The risk of a chemical or fuel reaching the river is almost zero. Fuel and oil are kept in small 20Lt containers. The large fuel storage tank is unused and will be taken away soon. If a 20lt drum of fuel or oil is punctured, sand is poured onto the fuel and collected later to be disposed of at the tip correctly. Herbicides are also in 20ltr drums. If punctured, spills are clean up with sand and disposed of correctly at the tip.

Staff training

All staff has an induction when commencing work and a refresher course every 12 months. The table below is to be kept up to date.

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