



ENVIRONMENTAL MANAGEMENT PLAN

FOR PEARL OYSTER NURSERY PONDS

DECEMBER 2020



ABBREVIATIONS AND DEFINITIONS

Activities means the pearl oyster production activities as described in Section 2.2.

Annual Monitoring Report means the report required to be attached to the Annual Return that meets the requirements of conditions 40 and 41 of EPL 283.

Annual Return means an NT EPA for demonstrating and reporting compliance with the conditions of EPL 283.

EMP means Environmental Management Plan.

EPBC Act means *Environment Protection Biodiversity Conservation Act 1999* (Cth),

EPL 283 means Environment Protection Licence 283.

N.A.T.A means National Association of Testing Authorities, Australia.

NT EPA means the Northern Territory Environment Protection Authority.

Paspaley means Paspaley Pearling Company Pty Ltd.

R&D Manager means Research and Development Manager- Spat Production Manager.

Site means the area of land identified in Map 1.

SOP means Standard Operating Procedure.

TPWC Act means *Territory Parks and Wildlife Conservation Act* (NT).

TTS means Total Suspended Solids.

WMPC Act means the *Waste Management Pollution Control Act* (NT).



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1. INTRODUCTION

This Environmental Management Plan (**EMP**) is a site-specific plan developed to ensure that appropriate environmental management practices are identified and implemented during the operation of the pearl oyster nursey at the location identified in **Section 2**.

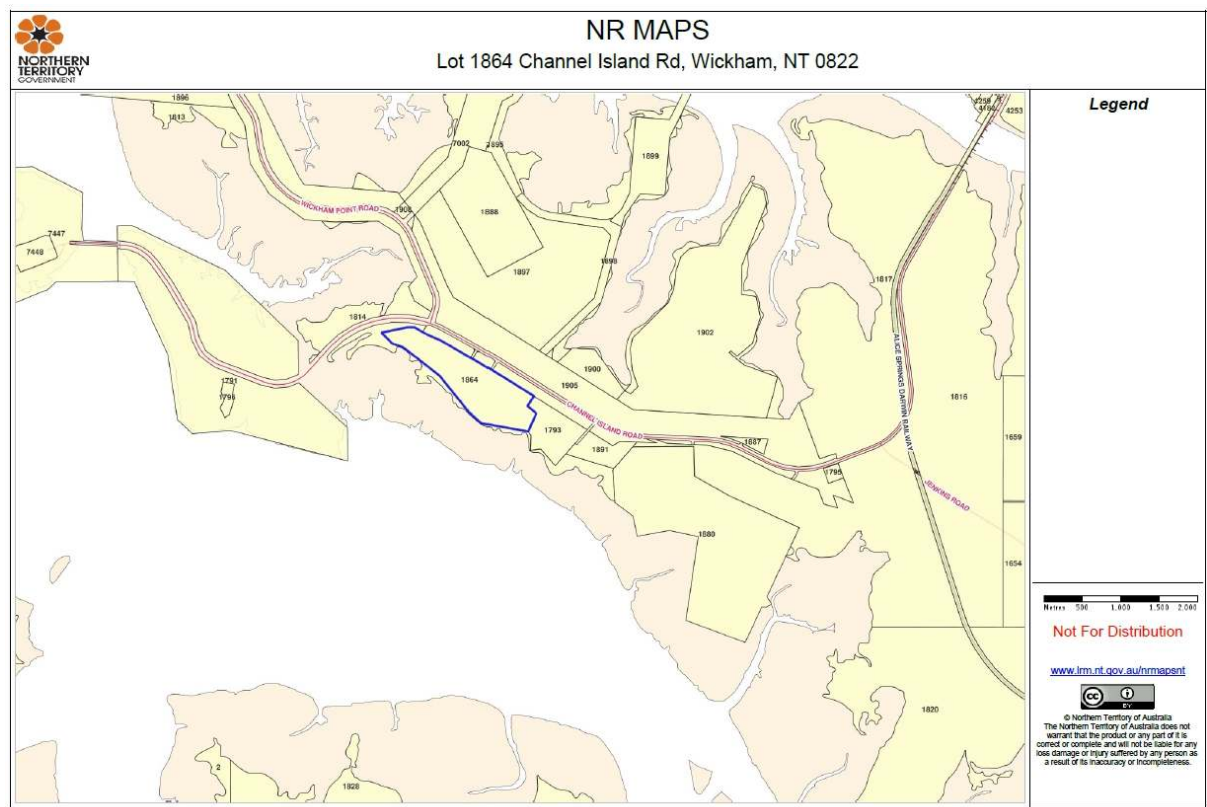
This EMP has been prepared in accordance with 'Guideline for the Preparation of an Environmental Management Plan (2015)' and has been designed as a working document that is periodically reviewed and amended throughout the life of the operation to reflect changing environmental conditions and management practices.

2. PROJECT OVERVIEW

2.1 Site Location

The Site is located on middle arm of Darwin Harbour (Blackmore River) on Lot 1864, which is located off the north-eastern shore of Channel Island, as highlighted in **Map 1** below. It is bordered by the Bladin Village workers accommodation (formerly Wickham Point Immigration Detention Centre).

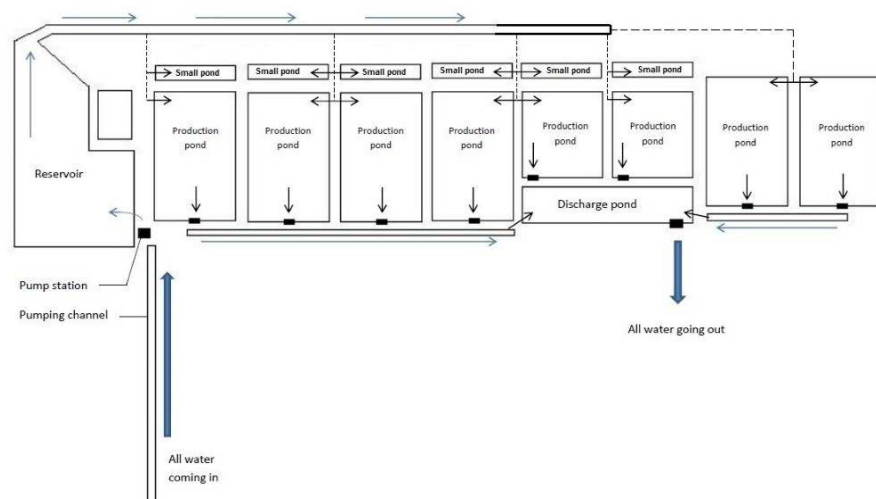
Map 1- Site Location



Nearby infrastructure includes Channel Island Power Station, Darwin Aquaculture Centre, and the Kleenheat Gas storage facility on Channel Island. Further around the Harbour is the Conoco-Phillips Darwin LNG plant and Inpex Offshore LNG plant. See **Map 2** below for further details.

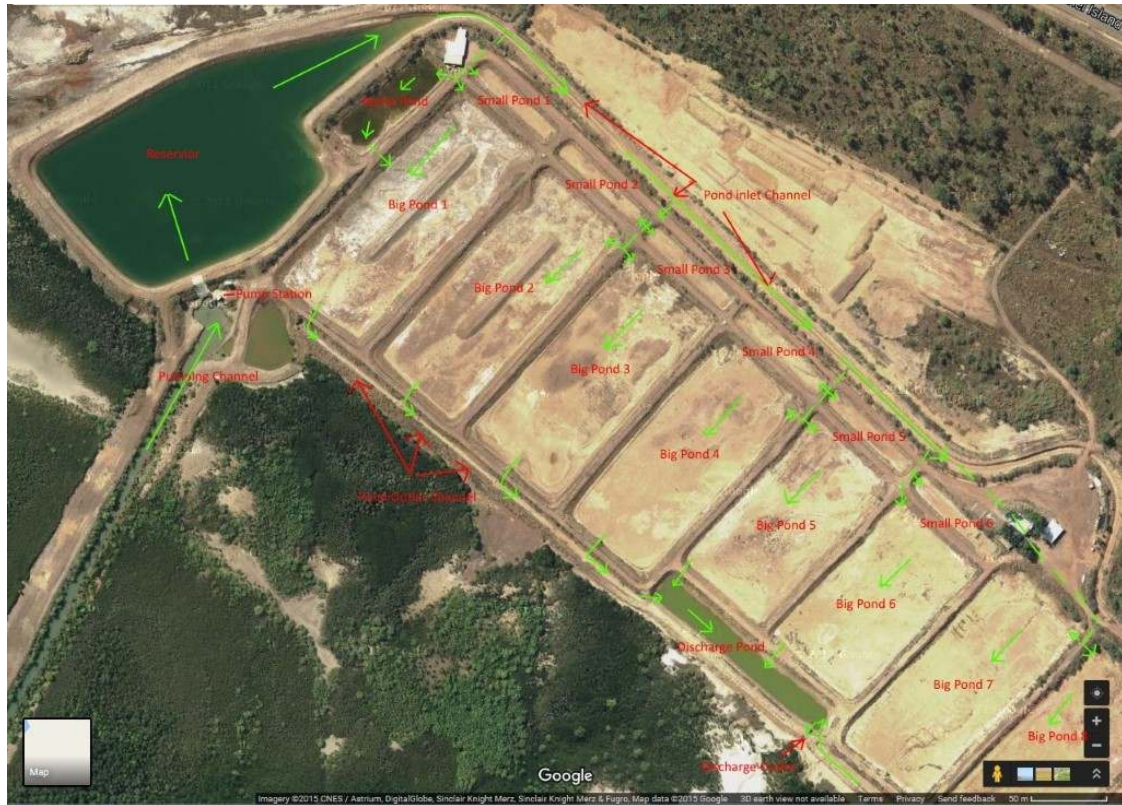
Map 2- Broader Location**2.2 Activity Description**

The site is an earthen pond system and used as a nursery for pearl oyster production. See the site design in the **Figure 1** below.

Figure 1- Pond System Design

Water is extracted from the middle arm of Darwin Harbour (Blackmore River) using automated electric pumps to fill the seawater reservoir. The water is then flowed past the oysters located in the ponds (or in tanks within the ponds) before being drained into the settlement/discharge pond. See **Figure 2** for further detail on water flow through the ponds.

Figure 2- Satellite Image Water Flow Overlay



Majority of suspended sediments in the settlement/discharge pond settle to the bottom of the pond, before the water is discharged into Darwin Harbour.

The amount/rate of water discharged is determined by the inlet valves located at the top of each point. The total water volume and pond drainage is controlled by sliding stackable wooden boards inside a concrete sleeve set in front of a large drainpipe (known as a MONK system).

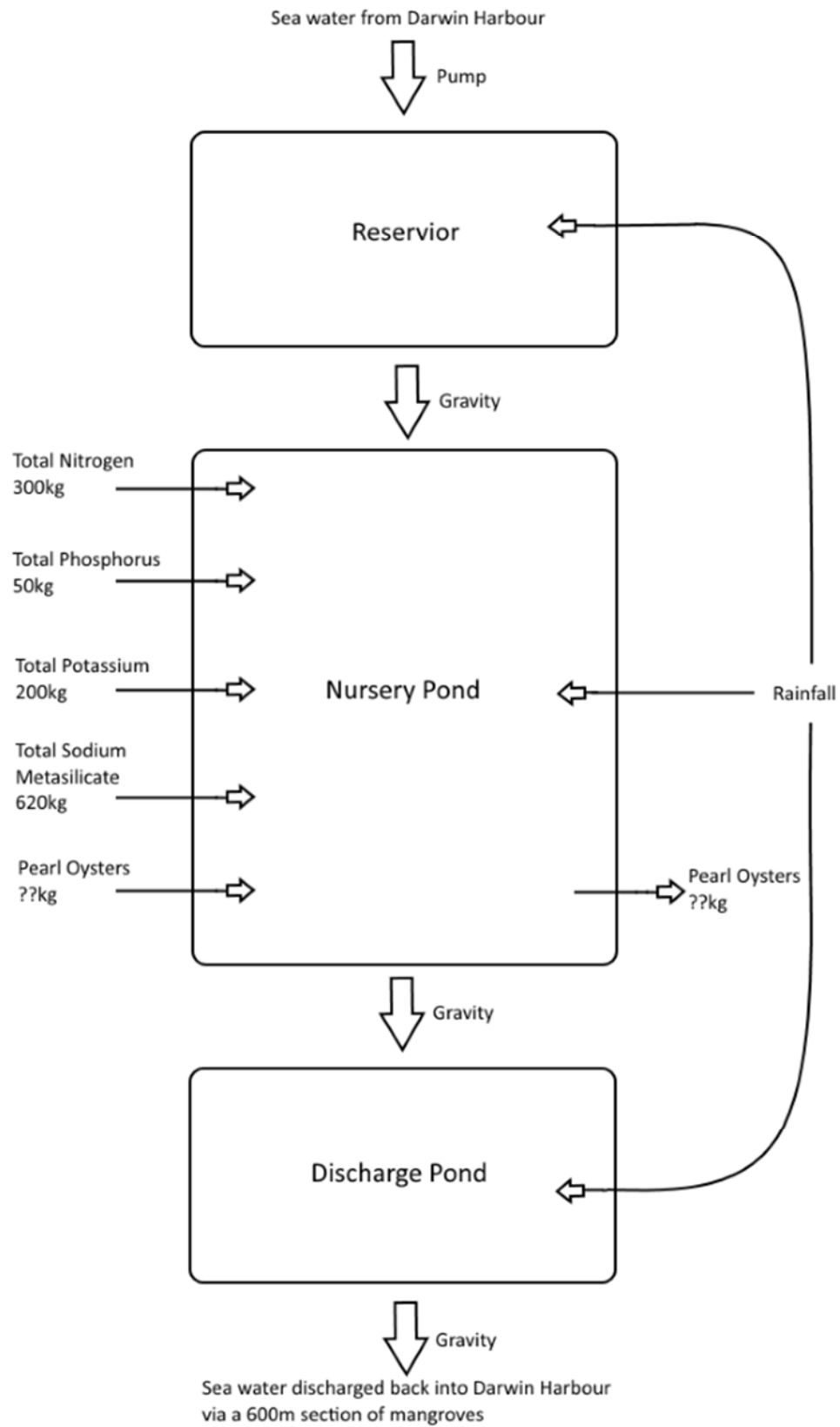
The discharged water is then dispersed through the extensive mangrove belt that exists between the discharge area and the estuary channel. See **Map 3** in **Section 7** below for further details regarding the location of the discharge point and estuary channel.

The pearl oysters are kept onsite for a few months at a time and then transported to the next farming site for continued production. When the pearl oysters are transported offsite the ponds are then drained and no further water is discharged from the site, until operations recommence.

Ponds are usually drained during the wet season and are designed to ensure that when empty any rain run-off will drain straight off the site.

2.3 Conceptual Site Model

Below is a conceptual site model of the Activity. The masses represented **Figure 3** are the previous maximum annual usage for each product.

Figure 3- Conceptual Site Model



3. LEGAL AND OTHER OBLIGATIONS

Environmental Protection Licence 283 (**EPL 283**) has been granted to Paspaley Pearling Company Pty Ltd (**Paspaley**) pursuant to section 34 of the *Waste Management and Pollution Control Act* (NT) (**WMPC Act**). This licence authorises Paspaley to discharge wastewater to the Blackmore River (Darwin Harbour) from the authorised discharge point as identified in **Table 2** and on **Map 3** below.

3.1 Licence Conditions

Paspaley must ensure that all discharge events consist only of wastewater from the operation of the pearl oyster ponds. The wastewater must only contain animal effluent and residues from the production ponds or tanks **AND** not exceed the trigger values as specified in condition 20 of the EPL 283. See **Attachment 1** for a copy of EPL283.

Other key conditions of the licence include:

- ensuring discharged wastewater is monitored in accordance with the approved surface water monitoring plan;
- monitoring equipment is maintained and fit for purpose; and
- provide an Annual Return and Monitoring Report are submitted to the Northern Territory Environment Protection Authority (**NT EPA**) for reporting on compliance with the licence conditions.

3.2 Legislation

EPL 283 does not relieve Paspaley from its general environmental obligations under section 12 of the WMPC Act and the duty to notify of incidents causing or threatening to cause pollution under section 14 of the WMPC Act. Similarly, Paspaley has obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and the *Territory Parks and Wildlife Conservation Act* (NT) to ensure the Activities do not impact any species and areas protected under these Acts.

4. ENVIRONMENTAL MANAGEMENT FRAMEWORK

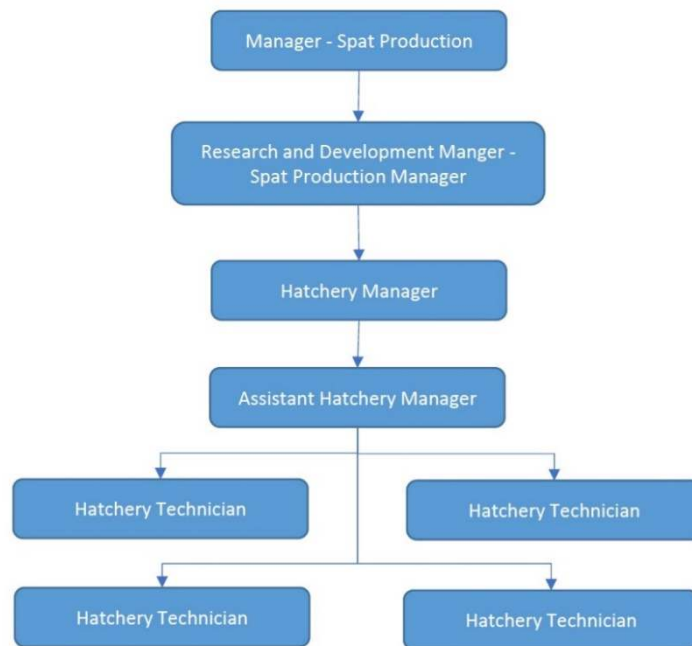
The environmental risks posed by the Activities will be managed and regulated by the commitments made in this EMP, which aim to achieve the EMPs Environmental Objectives (see **Section 6.1** below), the conditions of EPL 283 and relevant legislative obligations.

Paspaley also has various Standard Operating Procedures (**SOPs**) that address aspects of environmental management applicable to the risks posed by Activities. The relevant SOPs are sited in the **Environmental Risks and Controls Register** at **Attachment 2**.

4.1 Environmental Responsibility

The entire Paspaley hatchery team is responsible for the management of environmental risks on Site. All team members have been trained to undertake the water quality monitoring and to identify matters of environmental concern on Site, as detailed in **Section 9.2**.

The reporting and management structure of the hatchery team is described in **Figure 4** below.

Figure 4- Hatchery Team Hierarchy

The Research and Development Manager- Spat Production Manager (**R&D Manager**) has the ultimate responsibility of ensure Paspaley meets it environmental commitments made in this EMP and will be responsible for submitting to the NT EPA the annual water quality monitoring report as required by the EPL 283.

All staff members are required to report to R&D Manager any non-compliance or an incident that has the potential to cause environmental harm. The R&D Manager is responsible for immediately investigating the event/incident, implementing corrective actions and/or reporting the event/incident to the Spat Production Manager and the NT EPA (if required by the EPL 283 or by law).

5. EXISTING ENVIRONMENT

Darwin Harbour is a large macro-tidal estuary that experiences maximum tidal variations of around 7.8 meters (Williams and Wolanski 2003). The Harbour has two tidal cycles every 24 hours and there is some amplification of the tidal range in the order of 100 to 150 millimetres as the tide progresses through Darwin Harbour.

The area experiences full tidal ranges of the Harbour that produce strong currents with peak speeds of up to 2 to 2.5 meters/second (Williams and Wolanski 2003).

The turbidity of the water in the Harbour varies considerably depending on the stage of the tide. Within three hours the water can change from blue to turbid brown (Geoscience Australia, 1998). Modelling of tidal currents in Darwin Harbour has shown they do not readily flush particles out of the Harbour, instead particles tend to move to and fro and often migrate from one arm of the Harbour to another (Williams and Wolanski 2003).

The turbidity in the Harbour is also impacted by the rivers and creeks feeding into Middle Arm. In the wet season river channels are gradually infilled with sediment due to large inputs freshwater from heavy rains (DEH 2004). These freshwater inflows disperse sediments through



the water column, but are sometimes transported back into the estuarine system by the fringing mangroves (Padovan 2003).

6. ENVIRONMENTAL PROTECTION

6.1 Environmental Objectives

Paspaley is committed to the following objectives and will operate its pearl oyster nursery ponds in line with these:

- minimising the impact of its operations on the surrounding environment;
- ensure the discharged water does not exceed the trigger values at the compliance point (as identified in **Section 7** below);
- do all things reasonably practicable to ensure the Activities do not adversely affect the Declared Beneficial Uses and Objectives of the Darwin Harbour Region and the Darwin Rural Water Control District;
- remove all solid waste from the Site;
- minimise the risk of pond wall soil erosion;
- minimise pond sludge by draining ponds in the off season and letting it dry out;
- safely store and manage all dangerous, chemical and hazardous substances at the Site.

These objectives will be achieved by implementing the necessary control measures and environmental management practices, discussed below.

6.2 Risk Assessment and Control Measures

Qualitative risk assessment has been carried out for all identified aspects and risks of the Activities. A summary of this is provided in the Environmental Risk and Controls Register at **Attachment 2**.

The risk assessment was conducted in accordance with the ISO 31000:2018 standards for risk management principles and guidelines. The Risk Assessment Matrix at **Table 1** was used when assessing the aspects identified from the various operational activities.

Table 1- Risk Assessment Matrix

LIKELIHOOD	CONSEQUENCES					
		Insignificant	Minor	Moderate	Major	Critical
	Rare	Low	Low	Low	Medium	High
	Unlikely	Low	Low	Medium	Medium	High
	Possible	Low	Medium	Medium	High	High
	Likely	Medium	Medium	High	High	Extremely High
	Almost Certain	Medium	Medium	High	Extremely High	Extremely High

The consequence and likelihood ratings are determined as follows:

Critical: would cause catastrophic environmental damage.

Major: would cause extensive environmental damage.

Moderate: would cause some environmental damage.

Minor: would cause minor environmental damage.

Insignificant: would cause little or no environmental damage.

Almost Certain: expected to occur during the Activities.

Likely: could occur during the Activities.

Possible: occurrence is conceivable with multiple incidents in a 5 year period.



Unlikely: occurrence is conceivable with less than 5 incidents in a 5 year period.

Rare: conceivable but only in extreme circumstances/ once in 100 years.

6.3 Risk Management

The Environmental Risks and Controls Register shows only two aspects having a residual risk ranking of medium after the implementation of control measures. These include the turbidity and total suspended solids (TSS) exceeding the trigger values at the compliance point.

This has occurred on a number of occasions previously and upon further investigation by the Paspaley Hatchery team it was discovered turbidity and TSS are higher at the discharge point (and subsequently may be higher at the compliance point) if there are high levels of TTS and turbidity at the Inlet point.

The ponds only use sea water drawn from Middle Arm of Darwin Harbour at the inlet point identified on **Map 3** and no fresh water is added to the ponds. Water exchange through the operating ponds is <5% per day. The farm has utilised a maximum of <2.5 Mega Litres (ML) per day of seawater during operation. The only fresh water used at the site is for general domestic purposes for workers, drawn from the mains supply.

Meaning the total TSS and turbidity levels of the sea water remain unaffected and discharged water will generally be similar or of a better quality than the water drawn in from the Inlet Point.

6.4 Bio Remediation

Pearl Oysters do not require any feeding other than microalgae, meaning there are no nutrient inputs in the water from animal feed. Instead, only small amounts of fertiliser are applied to maintain a low level of microalgae in the ponds.

All discharged water passes through a settlement pond prior to release and then is dispersed through the extensive mangrove belt that exists between the discharge area and the estuary channel.

Mangroves have a high assimilative capacity for nutrients which will further reduce the nutrients entering the estuary.

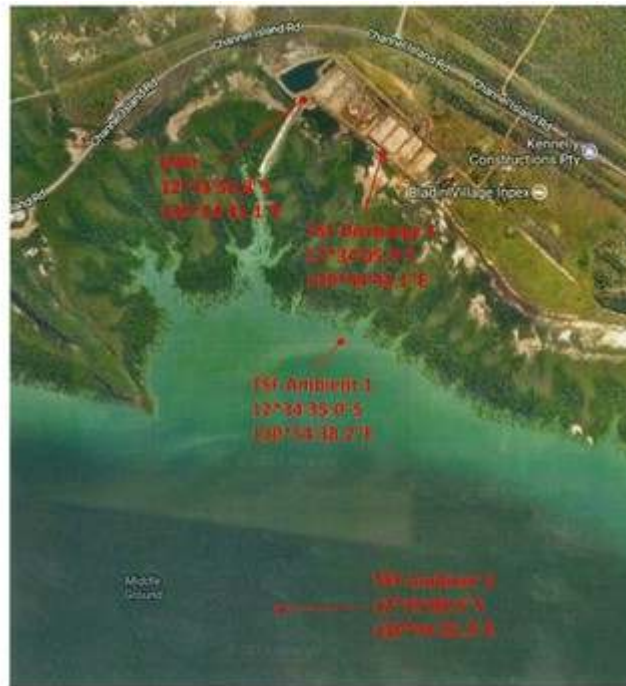
7. MONITORING & REPORTING

Surface water monitoring will be conducted monthly on a neap tide from the existing sample points. In-situ measurements will also be taken on a weekly basis from TFS Discharge 1 and the Inlet. See **Map 3 and Table 2** below for further details regarding location of each sampling point.

Table 2- Monitoring Location Coordinates

Location	Coordinates
TSF Ambient 1	12°34'35.0"S 130°54'38.2"E
TSF Ambient 3	12°35'08.5"S 130°54'26.3"E
TSF Inlet 1	12°33'56.8"S 130°54'31.1"E
TSF Discharge 1	12°34'05.9"S 130°54'44.1"E

Map 3- Satellite Image of Sample Locations



7.1 Monitoring Plan

The samples will be collected in accordance with the AS/NZS 5667 Water quality- Sampling standards and chemical analysis conducted at Envirolabs (a N.A.T.A accredited laboratory). Samples will be measured against the trigger values listed in the EPL 283 to ensure compliance with the licence.

See **Attachment 3** for full details of Surface Water Monitoring Plan.

7.2 Discharge Volume

The volume of discharged water will also be monitored. A flowmeter will be used at the Discharge Point to measure rate of flow and volume.

7.3 Pond Drainage Log

A log will be kept for all pond drainage. The log for each period of pond drainage will specify which ponds were drained, dates of drainage commencement and conclusion, estimated volume of water drained, and water quality.

7.4 Reporting

All findings from the Surface Water Monitoring Plan will be reported in the Annual Return and the Monitoring Report along with the flow rates and volumes of discharged water. This will be submitted within 10 business days after the anniversary date of the EPL 283.

The Annual Return/Monitoring Report must contain details of:

- any non-compliance with EPL 283 conditions; and
- any exceedance of trigger values.



The Annual Return/Monitoring Report should also contain potential causes for any non-compliance/exceedance, details of any environmental harm, actions taken to minimise environmental harm and corrective actions implemented to ensure non-compliance does not reoccur.

See **Attachment 4** for the template format to be used for the Annual Return.

The Monitoring Report must be prepared in accordance with the NT EPA 'Guidelines for Reporting on Environmental Monitoring' and in accordance with condition 41 of the EPL 283.

7.5 Reporting Responsibility

The Annual Monitoring Report/Report is the responsibility of the R&D Manager.

All Hatchery staff are responsible for reporting, to the R&D Manager, as soon as reasonably practical:

- any non-compliance of the EPL 283;
- trigger value exceedance; and
- any other activity/incident that has the potential to cause environmental harm.

The R&D Manager is responsible for investigating the matter and reporting it to the NT EPA, where required.

7.6 Reporting a Non-Compliance

Pursuant to condition 32 of the EPL 283 the NT EPA must be notified of any **non-compliance** as soon as reasonably practicable after first becoming aware of the non-compliance.

Condition 34 of the EPL 283 defines a **non-compliance** with the licence as:

- an exceedance of the trigger value at the compliance point, on three consecutive sampling occasions; or
- an exceedance of three times or more of a trigger value at the compliance point, on a single sampling occasion.

The non-compliance should be reported to the NT EPA using the NT EPA **Non-Compliance Form** at **Attachment 5a** and emailing it to waste@nt.gov.au. This form should also be used for reporting any other activity that has the potential to cause environmental harm.

any exceedances from the monthly sampling against the EPL 283 trigger values will be reported to the NT EPA

7.7 Record Keeping

All surface water monitoring plan results, including laboratory analysis must be kept electronically on Paspaley SharePoint and all Annual Returns and Monitoring Reports must be kept for a period of 2 years after submission.

All recorded non-compliances must be kept on SharePoint for a minimum of 2 years.



8. CORRECTIVE ACTIONS AND CONTINGENCIES

In the event of an onsite environmental incident that either breaches a condition of EPL 283 or has the potential to cause environmental, the first response will be to mitigate the impact of the incident.

The Emergency Response Plan to mitigate or reduce environmental impacts. **See a copy of the Emergency Response Plan at Attachment 6.**

Hatchery staff will take direction from the R&D Manager (or delegate) to implement measures to mitigate the impact and/or investigate the incident. Once investigated the R&D Manager may implement corrective actions to ensure there is no future reoccurrence of the incident.

8.1 Corrective Action Scenario

For example, if there is an exceedance of the TSS trigger value at the compliance point the R&D Manager may investigate possible causes and notify the NT EPA.

The investigation may include reviewing the samples from the Inlet Point and Discharge Point to determine if the TSS value of inflow water is higher than normal (which may be due to large tidal movements) or if it is a result of pond operations.

8.2 Key Contacts

Position	Name	Contact Details
Research and Development Manager- Spat Production Manager	Kane Taylor (24 hour emergency contact)	Ph: 0438839654 Mobile: 0438839654 Email: ktaylor@paspaley.com.au
Manager- Spat Production	Scott Akehurst	Ph: 89825588 Mobile: 0427107567 Email: sakerhurst@paspaley.com.au
Hatchery Manager	Lachlan Hart	Ph: 0421885369 Mobile: 0421885369 Email: lhart@paspaley.com.au
NT EPA	Pollution Hotline	Ph: 1800 064 567 Email: pollution@nt.gov.au
NT EPA	Licensing and Approvals	Ph: 8924 4218 Email: waste@nt.gov.au

9. CONTINUOUS IMPROVEMENT

Paspaley is committed to continuously improving its environmental performance. After the submission of each Annual Report the R&D Manager will meet with the Hatchery staff to review all non-compliances (both reported and unreported) and identify new measures and practices to reduce the risk of any future reoccurrences.

This will also be an opportunity to review the effectiveness of any recently introduced corrective actions. If necessary, the R&D Manager will update this EMP to reflect any new measures and practices.



9.1 Auditing

Every 6 months the R&D Manager will undertake an internal audit to ensure monitoring results are being recorded properly and staff are correctly reporting and responding to any non-compliances.

The R&D Manager will also audit staff sampling techniques, by undertaking site sampling with each hatchery staff member every 12 months.

9.2 Training

All Hatchery staff are trained to undertake the surface water monitoring from the sample locations. Staff are trained by the R&D Manager in accordance with the AS/NZS 5667 Water quality- Sampling standards as part of the staff induction process.

Staff are given additional training, at any time, if the R&D Manager determines their sampling techniques are not adequate.

Staff will also receive environmental emergency response training, including the process involved with reporting an incident in accordance with this EMP and complying with the relevant Paspaley standard operation procedures.

9.3 Inspection of Plant and Equipment

Every 6 months the R&D Manager will any plant and equipment used in conducting the Activities and the Surface Water Monitoring Plan are:

- reasonably fit for purpose and use;
- properly stored and maintained; and
- only used by persons properly trained to handle them.

Plant or equipment will not be changed, replaced or altered if the change, replacement or alteration increases the risk of environmental harm, unless approved by the NT EPA.

9.4 Communication

Paspaley is committed to sustained community engagement and has implemented a Consultation and Communication Plan, which includes a strategy for communicating with persons who are likely to have a real interest in, or be affected by, the Activities.

A copy of that plan is contained in **Attachment 7**.



10. REFERENCES

AS/NZS ISO 31000:2018 Risk Management Principles and Guidelines

AS/NZS 5667.9:1998 Part 9 Guidance on Sampling from Marine Waters

AS/NZS 5667.10:1998 Part 10 Guidance on Sampling from Waste Waters

Department of Environment and Heritage (DEH), Peter Dosine, 2004: *Assessment of the Ecological Condition of Freshwater Streams in the Darwin Region; Evidence from a survey of macroinvertebrate communities and water quality in the early dry season 2001*, Department of Environment and Heritage, Northern Territory.

Geoscience Australia, 1998: *Estuary Assessment Framework for Non-Pristine Estuaries- Estuary 98* (Darwin Harbour), Australia.

Northern Territory Environment Protection Authority, 2015: *Guideline for the Preparation of an Environmental Management Plan*

Northern Territory Environment Protection Authority, 2016: *Guidelines for Reporting on Environmental Monitoring*

Padovan, A., 2003: *Darwin Harbour Water and Sediment Quality*, from the Proceedings of Darwin Harbour Public Presentations- February 2003.

Williams, D. and Wolanski, E., 2003: *Darwin Harbour Hydrodynamics and Sediment Transport*, from the Proceedings of Darwin Harbour Public Presentations- February 2003.



ATTACHMENTS

The following documents are attached to this EMP:

- Attachment 1- Copy of the Environmental Protection Licence 283
- Attachment 2- Paspaley Environmental Risks and Controls Register
- Attachment 3- Surface Water Monitoring Plan
- Attachment 4- Annual Return Template
- Attachment 5a- Non-Compliance Notification Form
- Attachment 5b- Incident Report Form
- Attachment 6- Emergency Response Plan
- Attachment 7- Consultation and Communication Plan

ENVIRONMENT PROTECTION LICENCE

(Pursuant to section 34 of the *Waste Management and Pollution Control Act*)

Licensee	PASPALEY PEARLING COMPANY PTY. LIMITED
Licence Number	EPL283
Registered Business Address	PASPALEY PEARLING COMPANY PTY. LIMITED 19 Smith Street Mall Darwin NT 0800
ACN	009 591 708
ABN	67 009 591 708
Premises Address	Section 01864 Hundred of Ayers plan(s) S2001/213 1235 CHANNEL ISLAND RD, WICKHAM
Anniversary Date:	24 November
Commencement Date:	24/11/2019
Expiry Date:	23/11/2024
Scheduled Activity	Operating premises , other than a sewage treatment plant, associated with collecting, transporting, storing, re-cycling, treating or disposing of a listed waste (as per Table 1) on a commercial or fee for service basis.
Description	Operation of a pearl oyster aquaculture nursery, which results in the storage and disposal of a listed waste (<i>Animal effluent and residues</i>). Waste is stored in pond water, wastewater is disposed of through continuous discharge via the authorised discharge point to Blackmore River (Darwin Harbour).

ENVIRONMENT PROTECTION LICENCE 283

Table 1 - Listed Wastes Authorised to be Handled

Listed Waste	Collection	Transport	Storage	Treatment	Recycling	Disposal
Animal effluent and residues	✗	✗	✓	✗	✗	✓

✓ Activity authorised by this licence

✗ Activity not authorised by this licence

ENVIRONMENT PROTECTION LICENCE 283

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ATTACHMENTS

- 1 Attachment 1 Monitoring Plan
- 2 Attachment 2 Site Plan
- 3 Attachment 3 Monitoring Locations

ENVIRONMENT PROTECTION LICENCE 283

INFORMATION ABOUT THIS LICENCE

- This licence does not in any way relieve the licence holder from its obligations to comply with the *Waste Management and Pollution Control Act* (WMPC Act), including the general environmental duty in section 12 of the WMPC Act and the duty to notify of incidents causing or threatening to cause pollution under section 14 of the WMPC Act.

Duration of a licence (section 40, 43 and 45 of the WMPC Act)

- A licence will remain in force until its expiry date or until it is surrendered by the licensee or is suspended or cancelled in accordance with the WMPC Act.
- The licensee must notify the Northern Territory Environment Protection Authority (NT EPA) within 14 days after ceasing to conduct the activity.
- The licensee may, with the approval of the NT EPA, surrender the licence to the NT EPA.

Amendment or Revocation of a licence (section 37 of the WMPC Act)

- The licensee may apply to amend or revoke a condition of this licence.
- A fee applies and the application must be made using the designated form via NT EPA Online.
- The NT EPA may also amend or revoke a condition of this licence as set out in section 38 of the WMPC Act.

Transfer of a licence (section 46 of the WMPC Act)

- The licensee can apply to transfer their licence to another person.

Renewal of a licence (section 40 of the WMPC Act and section 3 of the Regulations)

- The licensee may apply for the renewal of their licence not earlier than 90 days, and not later than 30 days, before their licence expires.
- A fee applies and the application must be made via NT EPA Online.

Public Register

- A copy of environment protection licences and any plans for environmental management, reports, submissions or documents required as a condition of an environment protection licence, will be placed on a register in accordance with section 9 of the WMPC Act.
- A copy of the Annual Return will be placed on the register.
- The NT EPA makes this register freely available from the NT EPA website.

Environment Protection Objectives (Part 4 of the WMPC Act), and Water Quality Standards (section 73 of the *Water Act*)

- An Environment Protection Objective (EPO) is a statutory instrument to establish principles on which:
 - a. environmental quality is to be maintained, enhanced, managed or protected;
 - b. pollution, or environmental harm resulting from pollution, is to be assessed, prevented, reduced, controlled, rectified or cleaned up; and
 - c. effective waste management is to be implemented or evaluated.
- In accordance with section 18 of the WMPC Act a beneficial use, quality standard, criteria or objective declared under section 73 of the *Water Act* and in force is an environment protection objective for the purposes of the WMPC Act.

ENVIRONMENT PROTECTION LICENCE 283

- The following EPOs and Beneficial Use Declarations (BUDs) are relevant to this licence:
 - Darwin Rural Water Control District (Northern Territory Government Gazette No. G21, 2 June 1999)
 - Darwin Harbour Region (Northern Territory Government Gazette No. G27, 7 July 2010)

Environmental Interests

- This section highlights sensitivity of the surrounding land use and environment associated with the location of the approved activity.
- Sites of Conservation Significance (SOCS) are:
 - Darwin Harbour (SOCS Number 6)

Cultural Interests

- It is the licensee's responsibility to contact the Aboriginal Areas Protection Authority, appropriate land council or other governing body and ensure that any Authority Certificates required as a result of conducting the licenced activity are obtained and complied with.

ENVIRONMENT PROTECTION LICENCE 283

RULES FOR INTERPRETING THE CONDITIONS OF THIS LICENCE

- Where there is a discrepancy between the conditions of this licence and any plan, standard, guideline or other document referred to in this licence, the conditions of this licence prevail to the extent of the inconsistency.
- Any reference to any standard (Australian or international) in this licence means the relevant parts of the current version of that standard.
- A reference to any guideline or code of practice (or to the relevant parts of any guideline or code of practice) in this licence means the current version of the guideline or code of practice.
- Under section 39 of the WMPC Act, any contravention of or failure to comply with this licence by the licensee may be an offence.
- In determining whether the licensee has committed an offence, the licensee may be liable for the conduct of its directors, employees or agents.
- The licensee should ensure that each of its directors, employees, contractors or agents are aware of, and comply with, this licence.
- In this licence, unless the contrary intention appears, words that are defined in the WMPC Act are intended to have the meaning given to them in that Act.

ENVIRONMENT PROTECTION LICENCE 283

LICENCE CONDITIONS

GENERAL

- 1 The licensee must ensure the contact details recorded in NT EPA Online for this licence are correct at all times.
- 2 The licensee must at all times have a 24 hour emergency contact.
- 3 The licensee must pay the annual fee calculated in accordance with the method prescribed in the Regulations within 50 business days of the anniversary of the commencement date of this licence, for each year or part of a year that this licence is in force.
- 4 The licensee must cause clear and legible signage, in English, to be displayed in a prominent location at each public entrance to the premises that includes the following details:
 - 4.1 environment protection licence number issued under the WMPC Act; and
 - 4.2 24 hour emergency contact details.
- 5 The licensee must cause a copy of this licence to be available for inspection by any person:
 - 5.1 in hard copy, form at the premises; and
 - 5.2 on the licensee's website.
- 6 The licensee must provide to the NT EPA, within 10 business days of a request, a copy of any document, monitoring data or other information in relation to the activity, in the format requested by the NT EPA.
- 7 All notices, reports, documents or other correspondence required to be provided as a condition of this licence, unless otherwise specified as a condition of this licence, must be provided in electronic form by uploading the document via NT EPA Online (or by emailing waste@nt.gov.au).
- 8 The NT EPA may require the licensee to revise or amend and resubmit any amended document. Where the NT EPA requires a document to be resubmitted, the licensee must submit it to the NT EPA by the date specified by the NT EPA.
- 9 The licensee must, for the duration of this licence, implement, maintain and follow a Consultation and Communication Plan which includes a strategy for communicating with persons who are likely to have a real interest in, or be affected by, the activity.
- 10 The licensee must maintain a Complaint Log for all complaints received by the licensee in relation to the activity.
- 11 The licensee must ensure that the Complaint Log includes, for each complaint received by the licensee, the following information:
 - 11.1 the person to whom the complaint was made;
 - 11.2 the person responsible for managing the complaint;
 - 11.3 the date and time the complaint was reported;
 - 11.4 the date and time of the event(s) that led to the complaint;
 - 11.5 the contact details of the complainant if known, or where no details are provided a note to that effect;

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- 11.6 the nature of the complaint;
 - 11.7 the nature of event(s) giving rise to the complaint;
 - 11.8 prevailing weather conditions at the time (where relevant to the complaint);
 - 11.9 the action taken in relation to the complaint, including any follow-up contact with the complainant;
and
 - 11.10 if no action was taken, why no action was taken.
- 12 The licensee must implement, maintain and follow an Emergency Response Plan that addresses procedures for responding to emergencies associated with the activity that may cause environmental harm.

EARLY SURRENDER OF LICENCE

- 13 Any reports, records or other information required or able to be provided by the licensee under this licence must be submitted to the NT EPA prior to the licensee surrendering the licence. If the date on which a report, record or other information is required falls after the date the licensee requests to surrender this licence, the licensee must provide the report, record or information as far as possible using data available to the licensee up to and including the date the request to surrender the licence is made.

OPERATIONAL

- 14 The licensee must not collect, transport, store, recycle, treat or dispose of listed waste other than the listed waste specified in Table 1.
- 15 The licensee must, without limiting an other condition of this licence, do all things reasonable and practicable to ensure the activity does not adversely affect the Declared Beneficial Uses and Objectives as declared from time to time, including those applying to:
- 15.1 Darwin Rural Water Control District (Northern Territory Government Gazette No. G21, 2 June 1999); and
 - 15.2 Darwin Harbour Region (Northern Territory Government Gazette No. G27, 7 July 2010).
- 16 The licensee must ensure any plant and equipment used by the licensee in conducting the activity:
- 16.1 is reasonably fit for the purpose and use to which it is put;
 - 16.2 is maintained;
 - 16.3 is operated by a person trained to use the plant and equipment; and
 - 16.4 is operated by, or operated by a person accompanied by, a person trained to handle, store or dispose of listed waste in connection with the activity.
- 17 No change, replacement, or alteration of plant or equipment is permitted if the change, replacement or alteration increases the risk of environmental harm, unless approved by the NT EPA.

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DISCHARGES AND EMISSIONS

Discharges to water

- 18 This licence authorises the discharge of wastewater to Blackmore River (Darwin Harbour) from the authorised discharge point as identified in Table 2 and Attachment 3, and as otherwise allowed in accordance with the conditions of this licence.

Table 2 - Authorised Discharge Point

Authorised Discharge Point	Description	Source(s)	Location
TSF Discharge 1	A continual gravitational flow system whereby wastewater is released from the discharge pond via the authorised discharge point.	Wastewater from the operation of a pearl oyster aquaculture facility. Wastewater contains <i>Animal effluent and residues</i> from production ponds or tanks.	Latitude: -12.56831 Longitude: 130.91230

Note: See Attachment 2 - Site Plan and Attachment 3 - Monitoring Locations (including TSF Discharge 1).

- 19 The licensee must ensure that all discharge events at each authorised discharge point consist only of waste from the source(s) as specified in Table 2.
- 20 The licensee must ensure that the discharge from the authorised discharge point does not exceed the trigger values at the compliance point, in accordance with Attachment 1.
- 21 The licensee must, for each authorised discharge point, install, operate and maintain a device to measure and record:
- 21.1 the discharge rate of flow; and
 - 21.2 the discharge volume.
- 22 The licensee must ensure that the discharge from all discharge events at each authorised discharge point does not:
- 22.1 contain any floating debris, oil, grease, petroleum hydrocarbon sheen, scum, litter or other objectionable matter;
 - 22.2 cause or generate odours which would adversely affect the use of surrounding waters;
 - 22.3 cause algal blooms in the receiving water;
 - 22.4 cause visible change in the behaviour of fish or other aquatic organisms in the receiving water;
 - 22.5 cause mortality of fish or other aquatic organisms; or
 - 22.6 cause adverse impacts on plants.

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MONITORING

- 23 The licensee must conduct surface water monitoring in accordance with Attachment 1 ("the Monitoring Plan").
- 24 The licensee must ensure that all samples and field environmental data are representative of the conditions at the time of sampling.
- 25 The licensee must ensure that all samples and field environmental data are collected in accordance with recognised Australian Standards and guidelines (such as AS/NZS 5667, ANZECC/ARMCANZ)
- 26 The licensee must ensure that all monitoring samples are analysed at a laboratory with current NATA accreditation or equivalent, for the parameters to be measured.
- 27 The licensee must for all land based monitoring points specified in the Monitoring Plan:
- 27.1 install and maintain appropriate identification signage so that they are reasonably identifiable at all times; and
 - 27.2 maintain safe access and egress, as is reasonably practicable.
- 28 The licensee must ensure any samples collected in accordance with the Monitoring Plan or in connection with the activity or this licence, are obtained by, or under the supervision of a qualified sampler.
- 29 The licensee must ensure that, for each sample collected in accordance with the Monitoring Plan or the activity, the following information is recorded and retained:
- 29.1 the date on which the sample was collected;
 - 29.2 the time at which the sample was collected;
 - 29.3 the location at which the sample was collected;
 - 29.4 the name of the person who collected the sample;
 - 29.5 the chain of custody forms relating to the sample;
 - 29.6 the field measurements (if any) and analytical results (if any) relating to the sample; and
 - 29.7 laboratory quality assurance and quality control documentation.

RECORDING AND REPORTING

- 30 The licensee must retain records relating to waste, including listed waste, as required by the conditions of this licence, for a period of 2 years after the end of the 12 month period to which the record relates.
- 31 The licensee must keep records of all non-compliances with this licence. These records must be adequate to enable the licensee to comply with the non-compliance notification conditions of this licence.
- 32 The licensee must notify the NT EPA of any non-compliance with this licence by completing the Non-Compliance Notification via NT EPA Online (or by emailing waste@nt.gov.au), as soon as practicable after (and in any case within 24 hours after) first becoming aware of the non-compliance.
- 33 The licensee must include in the notification of non-compliance the following information:
- 33.1 when the non-compliance was detected and by whom;
 - 33.2 the date and time of the non-compliance;

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- 33.3 the actual and potential causes and contributing factors to the non-compliance;
 - 33.4 the risk of environmental harm arising from the non-compliance;
 - 33.5 the action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance;
 - 33.6 corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur;
 - 33.7 if no action was taken, why no action was taken; and
 - 33.8 a date when an incident investigation report will be submitted to the NT EPA.
- 34 A non-compliance with this licence includes:
- 34.1 an exceedance of a trigger value at the compliance point, as specified in Attachment 1, on three consecutive sampling occasions;
 - 34.2 an exceedance of three times or more a trigger value at the compliance point, as specified in Attachment 1, on a single sampling occasion.
- 35 The licensee must keep electronic records of all water quality monitoring results for both laboratory analysis and field parameters, as specified in Attachment 1.
- 36 The licensee must keep records of all exceedances of trigger values specified in Attachment 1. The licensee must ensure that the record includes the following information:
- 36.1 when the exceedance was detected and by whom;
 - 36.2 the date and time of the exceedance;
 - 36.3 the actual and potential causes and contributing factors to the exceedance;
 - 36.4 the risk of environmental harm arising from the exceedance assessed against Attachment 1;
 - 36.5 the action(s) that have or will be undertaken to address the exceedance and/or environmental harm; and
 - 36.6 if no action was taken, why no action was taken.
- 37 The licensee must as soon as practicable (and in any case within 24 hours) after becoming aware, notify the NT EPA of any potential or actual environmental harm or pollution.
- 38 The licensee must comply with the requirements of section 14 of the WMPC Act.
- 39 The licensee must submit a completed Annual Return via NT EPA Online within 10 business days after each anniversary date of this licence, which relates to the preceding 12 month period.
- 40 The licensee must complete and provide to the NT EPA a Monitoring Report, as prescribed by this licence, within 10 business days after each anniversary date of this licence.
- 41 The licensee must ensure that each Monitoring Report:
- 41.1 is prepared in accordance with the requirements of the NT EPA 'Guideline for Reporting on Environmental Monitoring';
 - 41.2 includes a tabulation of all monitoring data required as a condition of this licence, provided both as an attachment to the Monitoring Report and electronically in Microsoft Excel format;
 - 41.3 includes an analysis of the monitoring data to demonstrate any influence on water quality associated with the activity;

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- 41.4 includes the relevant laboratory quality assurance and quality control documentation as an Appendix to the Monitoring Report;
 - 41.5 includes long term trend analysis of monitoring data to demonstrate any environmental impact associated with the activity over a minimum period of three years (where the data is available);
 - 41.6 includes an assessment of environmental impact from the activity based on annualised monitoring data (annual means) compared against trigger values in Attachment 1; and
 - 41.7 includes a review of the water quality monitoring program and provides recommendations on monitoring frequency, parameters and site specific trigger values (SSTVs).
- 42 The NT EPA may require the licensee to revise or amend and resubmit any Monitoring Report. Where the NT EPA requires the Monitoring Report to be resubmitted, the licensee must submit it to the NT EPA by the date specified by the NT EPA.

PERFORMANCE IMPROVEMENT

- 43 The licensee must provide to the NT EPA, within 6 months of the commencement date of this licence, an updated Consultation and Communication Plan, which meets the requirements of condition 9.
- 44 The licensee must provide to the NT EPA, within 6 months of the commencement date of this licence, an updated Emergency Response Plan which meets the requirements of condition 12.
- 45 The licensee must provide to the NT EPA, within 12 months of the commencement date of this licence, an updated Environmental Management Plan. The licensee must ensure that the Environmental Management Plan:
- 45.1 advises how wastewater discharge quality, disposal of animal residues, noise, odour and hazardous substances will be managed to avoid adverse impacts on the environment;
 - 45.2 is drafted in accordance with requirements the NT EPA Guideline 'Preparation of an Environmental Management Plan'; and
 - 45.3 provides information on how potential risks from nutrient enrichment in the receiving environment associated with the activity will be minimised.

END OF LICENCE CONDITIONS

This licence is not valid unless signed below:



Leonie Cooper
Director Environment Authorisations
Delegate of the Northern Territory
Environment Protection Authority
Dated: 28/11/2019

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DEFINITIONS

All terms in the Licence which are defined in the *Waste Management and Pollution Control Act* have the meaning given in that Act unless otherwise or further defined in this section.

DEFINITION	In this licence, unless a contrary intention appears:
24 hour emergency contact	the phone number of a person who can be contacted at any time and be capable of responding to and providing information about any incident associated with the activity.
Activity	the Scheduled activity as described on the covering page of this licence.
Annual fee	yearly fee payable in respect of the activity as specified in the WMPC Act and the Regulations.
Annual Return	an NT EPA prescribed format for demonstrating and reporting compliance with the conditions of this licence and providing information on waste volumes for the preceding 12 month period.
ANZECC/ARMCANZ	Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, 2000: National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting.
Business days	a day not Saturday, Sunday or a public holiday, in the Northern Territory.
Complaint Log	a register of complaints to be maintained by the Licensee that records the details of each complaint received in relation to the activity.
Consultation and Communication Plan	a written plan documenting proposed consultation and communications for the activity before, during and after the activity which includes a strategy for communicating with members of the public who are likely to have a real interest in, or be affected by, the activity.
Contact details	includes the 24 hour emergency contact, and name, position title and phone number of a representative of the licensee who can be contacted about the licence and activity.
Contaminant	a solid, liquid or gas or any combination of such substances and includes: (a) noise, odour, heat and electromagnetic radiation; (b) a prescribed substance or prescribed class of substances; and (c) a substance having a prescribed property or prescribed class of properties.
Discharges	allow a liquid, gas or other substance to flow out from where it has been confined.
Emergency Response Plan	a written plan documenting the licensee's procedures for responding to emergencies caused by, resulting from or associated with the activity and that may cause environmental harm.
Environmental harm	(a) any harm to or adverse effect on the environment; or (b) any potential harm (including the risk of harm and future harm) to or potential adverse effect on the environment, of any degree or duration and includes environmental nuisance.
Environmental nuisance	means: (a) an adverse effect on the amenity of an area that:

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	(i) is caused by noise, smoke, dust, fumes or odour; and (ii) unreasonably interferes with or is likely to unreasonably interfere with the enjoyment of the area by persons who occupy a place within the area or are otherwise lawfully in the area; or (b) an unsightly or offensive condition caused by contaminants or waste.
Incident	includes: (a) an accident, emergency or malfunction; and (b) a deliberate action, whether or not that action was taken by the person conducting the activity in the course of which the incident occurred.
Land	includes water and air on, above or under land.
Listed waste	a waste included under Schedule 2 of the Regulations.
Maintain	kept in a manner that it does not present or cause a risk of environmental harm or a hazard to persons or property or, for the purposes of documents including plans, a process of reviewing and amending documentation to ensure it is relevant.
Material environmental harm	environmental harm that: (a) is not trivial or negligible in nature; (b) consists of an environmental nuisance of a high impact or on a wide scale; (c) results, or is likely to result, in not more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment; or (d) results in actual or potential loss or damage to the value of not more than \$50,000 or the prescribed amount (whichever is greater).
NATA	National Association of Testing Authorities, Australia.
Non-compliance	failure or refusal to comply, whether by act or omission, with obligations or requirements and includes any exceedance of a licence limit.
Non-compliance notification	an NT EPA prescribed format for notifying the NT EPA of a non-compliance.
NT EPA Online	online system for Environment Protection Licence (EPL), Environment Protection Approval (EPA) and Waste Discharge Licence (WDL) lodgement and maintenance.
Plant and equipment	all material items used in association with the activity, including (but not limited to) storage vessels and containers, pipe work and hosing, vehicles (including vessels), tools, and measuring equipment.
Pollute	(a) emit, discharge, deposit, or disturb, directly or indirectly, a contaminant or waste; or (b) cause, permit, or fail to prevent, directly or indirectly, the emission, discharge, deposition, disturbance or escape of a contaminant or waste.
Pollution	(a) a contaminant or waste that is emitted, discharged, deposited or disturbed or that escapes; or (b) a contaminant or waste, effect or phenomenon, that is present in the environment as a consequence of an emission, discharge, deposition, escape or disturbance or a contaminant or waste.
Premises	the premises identified in this licence which includes equipment, plant and structures, whether stationary or portable, and the land on which premises are situated.
Public entrance	access to the premises that is utilised by the public.

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Qualified sampler	a person who has training and experience in obtaining samples from the relevant environmental medium.
Regulations	<i>Waste Management and Pollution Control (Administration) Regulations.</i>
Serious environmental harm	environmental harm that is more serious than material environmental harm and includes environmental harm that: (a) is irreversible or otherwise of a high impact or on a wide scale; (b) damages an aspect of the environment that is of a high conservation value, high cultural value or high community value or is of special significance; (c) results or is likely to result in more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment; or (d) results in actual or potential loss or damage to the value of more than \$50,000 or the prescribed amount (whichever is greater).
Stormwater	water flowing over ground surfaces, in natural streams and drains as a direct result of rainfall over a catchment and consists primarily of rainfall runoff.
Trigger values	assigned value for each indicator used to assess the risk to an environmental value, a value that initiates some type of pre-defined management action.
Waste	(a) a solid, a liquid or a gas; or (b) a mixture of such substances, that is or are left over, surplus or an unwanted by-product from any activity (whether or not the substance is of value) and includes a prescribed substance or class of substances.
Wastewater	water that contains a contaminant or waste.
Water	includes: (a) surface water, ground water and tidal waters; (b) coastal waters of the Territory, within the meaning of the <i>Coastal Waters (Northern Territory Powers) Act 1980</i> of the Commonwealth; and (c) water containing an impurity.
WMPC Act	the Northern Territory <i>Waste Management and Pollution Control Act</i> .

		ENVIRONMENTAL RISK AND CONTROLS REGISTER								
		Operational Area:- Nursery Ponds				Approved by: Kane Taylor Last reviewed: November 2020			C - Consequence (worst case scenario) L - Likelihood (probability of occurrence) R - Risk rating (Raw = without controls) (Residual = after controls)	
Task/Activity/Process	Potential Hazard/Aspect	Raw Risk Without Controls			Controls	Residual Risk After Controls			Further Action	
		C	L	R		C	L	R		
Severe weather and rainfall ie cyclones	Pond wall and channel erosion.	Major	Possible	Medium	Weekly routine inspection of pond and channel walls by onsite staff for erosion. Any possible site for erosion will be promptly repaired by an authorised contractor. Draining ponds will be minimised during times of increased rainfall. Multiple ponds will not be drained at the same time.	Major	Rare	Low	If staff identify pond wall or channel erosion it must be brought to the Research and Development Manager immediately.	
Dead pearl oysters left onsite	Ground and water pollution	Minor	Almost Certain	Medium	Oysters in the ponds are checked weekly. Any dead oysters are removed from the ponds, put in an onsite freezer and then taken to an off site disposal facility.	Minor	Unlikely	Low	Oyster mortalities must be recorded operational monthly reports.	
Pond sludge	Water pollution	Moderate	Unlikely	Low	Oysters are micro alage feeders and don't require any additional feed, therefore there is very little sludge build up in the channels and discharge pond. At the end of each production season the ponds are drained any remaining sludge gets dried out before the next season.	Minor	Rare	Low		
Storage and use of fuels/oils/chemicals	Ground and water pollution	Moderate	Possible	Medium	Fuel, chemicals and other hazardous materials stored onsite must be stored in accordance with the appropriate MSDS and Paspaley's SOP014- Chemical Use and Storage. If there is a spill/leak spill kits are available in hatchery.	Moderate	Unlikely	Low	If there is an onsite spill of fuel, chemicals or other hazardous materials then the Research and Development Manager needs to be notified immediately. The Research and Development Manager has the onus of notifying the NT EPA, and any other relevant government bodies if the spill event causes or has the potential to cause environmental harm. Refer to the Emergency Reponse Plan.	
Waste Water Discharge	Water quality pollution/exceeding trigger value pH	Minor	Rare	Low	Waste water discharge is conducted in accordance with the conditions outlined in the licence EPL 283. If the water quality testing (realtime) indicates an elevation to any of the reportable water quality elements then the R&D Manager will be notified and may investigate further and take corrective action (if required). The R&D Manager will also be responsible for notifying the NT EPA, if required.	Minor	Rare	Low	All waste water discharge information can be found in the EPL 283. Previous monitoring reports are available on SharePoint. TSS and Turbidity levels may be higher at time due to higher levels at the Inlet point, which is not something Paspaley can control.	
	Water quality pollution/exceeding trigger value - Dissolved Oxygen	Minor	Unlikely	Low		Minor	Unlikely	Low		
	Water quality pollution/exceeding trigger value - Turbidity	Minor	Likely	Medium		Minor	Likely	Medium		
	Water quality pollution/exceeding trigger value - Filterable Reactive Phosphorus	Moderate	Unlikely	Low		Moderate	Unlikely	Low		
	Water quality pollution/exceeding trigger value - Total Phosphorous	Moderate	Unlikely	Low		Moderate	Unlikely	Low		
	Water quality pollution/exceeding trigger value Ammonia	Moderate	Unlikely	Low		Moderate	Unlikely	Low		
	Water quality pollution/exceeding trigger value - Nitrate as Nitrogen	Moderate	Unlikely	Low		Moderate	Unlikely	Low		
	Water Quality Pollution - Total Nitrogen	Moderate	Unlikely	Low		Moderate	Unlikely	Low		
	Water Quality Pollution - Total Oxidised Nitrogen	Moderate	Unlikely	Low		Moderate	Unlikely	Low		
	Water Quality Pollution - Biological Oxygen Demand	Moderate	Unlikely	Low		Moderate	Unlikely	Low		
	Water Quality Pollution - Total Suspended Solids	Minor	Likely	Medium		Minor	Likely	Medium		
	Water Quality Pollution - Chlorophyll-a	Moderate	Unlikely	Low		Moderate	Unlikely	Low		

**Attachment 3: Surface Water Monitoring Plan**

				Sample Locations ¹			
Site Code				TSF Discharge 1 (Discharge Pond - Monitoring point for assessment of discharge water quality)	TSF Ambient 1 ² (Compliance point – where discharge water enters the Blackmore River)	TSF Ambient 3 (Monitoring point for assessment of background ambient water quality in Darwin Harbour)	INLET (Monitoring point for water being pumped into the facility)
Longitude				130.912222	130.910639	130.901938	130.908591
Latitude				-12.568233	-12.575809	-12.591187	-12.565763
Parameter	Abbreviation	Units	Trigger Values ³				
In situ (field) Measurements							
pH	pH	pH units	6.0-8.5	W	M	M	W
Electrical Conductivity	EC	µS/cm	NA	W	M	M	W
Dissolved Oxygen	DO	% saturation	80-100%	W	M	M	W
Turbidity	NTU	NTU	<4 ⁴	W	M	M	W
Temperature	T	°C	NA	W	M	M	W
Parameters to be assessed at a NATA accredited laboratory							
Biological Oxygen Demand	BOD	mg/L	NA	M	M	M	M
Total Suspended Solids	TSS	mg/L	<10	M	M	M	M
Filterable Reactive Phosphorous	FRP	µg/L	<10	M	M	M	M
Total Phosphorous	TP	µg/L	<30	M	M	M	M
Ammonia	NH ₃	µg/L	<20	M	M	M	M
Total Nitrogen	TN	µg/L	<300	M	M	M	M
Total Oxidised Nitrogen	NO _x	µg N/L	<20	M	M	M	M
Nitrate	NO ₃	µg/L	NA	M	M	M	M
Nitrite	NO ₂	µg/L	NA	M	M	M	M
Chlorophyll-a	Chl-α	µg/L	<4	M	M	M	M

W = Weekly during operation, when actively discharging wastewater in accordance with Table 2.

M = Monthly during operation, when actively discharging wastewater in accordance with Table 2.

2. NA = Not Available

¹ Monitoring Locations are shown in Attachment 3.² For monitoring at this location, the sample must be collected during an outgoing or turning tide (not an incoming tide).³ Water Quality Objectives for the Darwin Harbour Region – Blackmore River Estuary, to be applied to the compliance point (TSF Ambient 1).⁴ Only applies where the turbidity value at TSF Discharge 1 is greater than the INLET on same sampling occasion.

ANNUAL RETURN

Information on this form is required in accordance with the conditions of your licence or approval issued under part 5 of the *Waste Management and Pollution Control Act* or part 7 of the *Water Act*.

Failure to provide the information requested on this form and/or the provision of false or misleading information is an offence under the legislation and you may be liable to heavy penalties.

LICENCE/APPROVAL NO.	
REPORTING PERIOD	

Section 1. Licence/Approval Holder Details

Please check your business details and contact details including 24 hour emergency response in NT EPA online and/or on page one of your licence.

Are these details correct?

- ☐ Yes Go to Section 2
- ☐ No Please correct your details by updating in NT EPA Online or complete the table below.

Licence holder	
Legal Entity Name:	
ABN:	
Registered Business Address:	
Postal Address:	
Contact Person:	
Position Title:	
Contact Details:	
b/h:	
mobile:	
email:	
Location of premises	
Address:	
24 hour emergency response	
Position Title:	
phone:	
mobile:	

Section 2. Statement of Compliance

Were all conditions of the licence/approval complied with during the reporting period?

☐ Yes Proceed to Section 4.

☐ No Complete details below (add more rows if required)

Details of Non-compliance				
Condition number	Date of non-compliance (dd/mm/yy)	Was NT EPA notified? (Yes / No)	If yes, date NT EPA notified (dd/mm/yy)	If yes, how was NT EPA notified? (e.g. phone, email, Pollution Hotline)
		If no, complete Section 3		

Section 3. Report of Non-compliance

Please supply the following details for each non-compliance not reported to the NT EPA identified in Section 2. Use a separate page for each non-compliance.

The date and time of the non-compliance.
When the non-compliance was detected and by whom.
The actual and potential causes and contributing factors to the non-compliance.
The risk of environmental harm arising from the non-compliance.
The action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance.
Corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur.
If no action was taken, why no action was taken.

Section 4. Signature and Certification

This declaration must only be signed by a person(s) with the legal authority to sign it. The ways in which the application may be signed, and the people who may sign the application, are set out in the categories below.			
If the licence holder is:	Tick	The application must be signed and certified by one of the following:	
An individual	☐	The individual.	
A partnership	☐	A partner.	
A company	☐	The common seal being affixed in accordance with the <i>Corporations Act</i> , or	
	☐	Two directors, or	
	☐	A director and a company secretary, or	
	☐	If a proprietary company that has a sole director who is also the sole company secretary – by that director.	
A public authority	☐	The Chief Executive Officer (CEO) of the public authority, or	
	☐	By a person delegated to sign on the public authority's behalf in accordance with its legislation (Please note: a copy of the relevant instrument of delegation must be attached to this application).	
I/We hereby declare that the information provided in this Annual Return and accompanying documents is to the best of my/our knowledge, true and correct.			
Signature		Signature	
Name (printed)		Name (printed)	
Position		Position	
Date		Date	
Seal (if signing under seal):			

**Attachment 5a- Non-Compliance Notification Form**

This form is to be completed by the R&D Manager and sent to waste@nt.gov.au

Date and Time of non-compliance was detected:	
Who detected the non-compliance:	
Details of the Incident:	
The actual and potential causes and contributing factors to the non-compliance:	
The risk of environmental harm arising from the non-compliance:	
The action(s) that have or will be taken to mitigate any environmental harm arising from the non-compliance:	
Corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur:	
If no corrective action was taken, reasons why no action was taken:	
A date when an incident investigation report will be submitted to the NT EPA:	

**Attachment 5b- Incident Report Form**

This form is to be completed by the R&D Manager and sent to pollution@nt.gov.au

Date and Time of Notification:	
Person / Company:	
Incident:	

(a) the incident causing or threatening to cause pollution	
(b) the place where the incident occurred	
(c) the date and time of the incident	
(d) how the pollution has occurred, is occurring or may occur	
(e) the attempts made to prevent, reduce, control, rectify or clean up the pollution or resultant environmental harm caused or threatening to be caused by the incident	
(f) the identity of the person notifying the NT EPA	



Attachment 6- Emergency Response Plan

PURPOSE AND SCOPE

This Emergency Response Plan details the requirements for:

- managing and cleaning up of spills i.e. chemical, fuel or waste oil spills/leaks that may occur on site.
- managing and/or responding to the exceedance of the trigger values contained in EPL 283.
- any other activity/incident that has the potential to cause environmental harm.

HAZARDOUS SPILLS

In the event of hazardous spill staff must undertake the following:

1. stop all work in the affected area.
2. ensure the safety of all staff, visitors and the public in the vicinity of the spill.
3. conduct a brief assessment of the affected area and notify the R&D Manager.

The assessment may include the following:

- the quantity of the substance spilt/ nature of the incident;
 - the type of substance (i.e. poisonous, flammable etc);
 - location and extent of the spill;
 - any nearby sensitive areas (i.e. mangroves)
4. The R&D Manager will refer to the container label or Material Safety Data Sheet (MSDS) to determine the appropriate Personal Protective Equipment (PPE) and clean up/disposal requirements.
 5. Under the instruction of the R&D Manager stop or contain the spill (put a lid on the container, plug the hole, put container upright etc)
 6. R&D Manager to instruct staff to clean up spill using the correct PPE and Skill Kits, stored in the Hatchery.
 7. R&D Manager to complete an Incident Report Form and send to the NT EPA within 24 hours, if the incident may have caused or threatens to cause serious environmental harm. See Attachment 5b for a copy of the Incident Report Form.

Where the spill presents an immediate danger to people, property of the environment the R&D Manager may contact the NT Fire & Rescue Service (Phone 000).

EXCEEDANCE OF TRIGGER VALUE

In the event there is an exceedance of the trigger values of EPL 283 staff must undertake the following:

- immediately notify the R&D Manager.
- the R&D Manager may investigate to determine the cause of the exceedance.
- the R&D Manager will identify and implement corrective actions, where appropriate, to reduce the risk of future exceedances.
- the R&D Manager will notify senior management and submit and a Non-Compliance Report to the NT EPA, where required under EPL 283 or law. Non-Compliance should be made using the **Non-Compliance Notification Form** at **Attachment 5a.**



- the R&D Manager will keep a record of trigger values exceedances.

A non-compliance with EPL 283 includes:

- an exceedance of a trigger value at the compliance point, on three consecutive occasions; or
- an exceedance of three times or more a trigger value at the compliance point, on a single sampling occasion.

OTHER INCIDENT

In the event any other environmental incident occurs onsite the R&D Manager must be notified immediately.

The R&D Manager will then determine if the incident causes or has the potential to cause environmental harm.

Does not cause environmental harm

If the incident does not cause or has the potential to cause environmental harm the R&D Manager will take control and provide response instructions to ensure the environment and community are not impacted.

Threat to cause environmental harm

If the incident has the potential to cause environmental harm the R&D Manager must notify emergency services and/or NT EPA.

The R&D Manager will work with emergency services and/or NT EPA to take control and act to prevent, reduce, rectify and clean up any pollution and environmental harm caused by the incident.

An Incident Report must also be submitted to the NT EPA using the **Incident Report Form** at **Attachment 5b**.



Attachment 7- Consultation and Communication Plan

INTRODUCTION

A nursery specific 'Consultation and Communication Plan' is a tool to formalise the process of ensuring that anyone who has an interest in the potential impacts from the Activities, has a say about it.

Since the Site has been operating for sometime and there are no plans to upgrade or expand the Site in the near future the interest in the potential impacts will be limited to the existing Activities.

STAKEHOLDERS

There are three key stakeholders for the pearl oyster nursery operation:

- Paspaley Senior Management
- NT EPA
- the general public (including any surrounding industry)

Paspaley Senior Management are kept updated by pearl oyster nursery operations by monthly briefings from the R&D Manager, which includes details of any non-compliance, corrective actions implemented, and any complaints/concerns made by other stakeholders.

Paspaley's communication with NT EPA primarily relates to annual and incident reporting obligations, which are outlined in the Nursery EMP.

Communication from the general public is likely to relate to complaints or concerns regarding the Activities. Paspaley staff will manage any complaints by documenting the complaints in the Complaints Form (see attached) and then referring it to the R&D Manager for action.

The R&D Manager will either escalate the matter to senior management or investigate the complaint and take actions to rectifying any identified problems with the activities. The R&D Manager also has the responsibility to communicate the outcomes to the complainant.

The R&D Manager will store all complaints and outcomes in the complaints log.



Complaint Form

Date and time of complaint	
Contact details of the complainant (or where no details are provided a note to that effect)	
Person to who the complaint was made	
Nature of the complaint	
Nature of the incident giving rise to the complaint	
Prevailing weather conditions at the time of the incident	
Action taken in relation to the complaint (including and follow-up contact with the complainant)	
If no action was taken, why no action was taken	