

Waste Discharge Licence 201-2
Manthathpe Wastewater Treatment Plant
Improvement Plan 2019



Manthape Wastewater Treatment Plant Discharge Area

Water Services Remote

Document History and Status

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1. INTRODUCTION

Power and Water Corporation operates the Manthathpe Wastewater Treatment Plant (WwTP) at Namarluk, Northern Territory. The wastewater treatment plant services a population of approximately 156 from the Manthathpe community (DHCD 2017). The primary purpose of the treatment system is to provide a centralised facility for the treatment of sewage to reduce the public health risk within communities located in the sewerage catchment and to provide a treatment barrier that prevents direct faecal contamination of receiving waters consistent with National Guidelines (NHMRC 2008).

The *Water Act* 1992 (NT) prohibits a person from allowing waste to come into contact with water or to pollute waters, except where specifically authorised to do so through the granting of a Waste Discharge Licence (WDL). In the context of the *Water Act*, to pollute means to directly or indirectly alter the physical, thermal, chemical, biological or radioactive properties of the water so as to render it less fit for a prescribed beneficial use for which it is, or may reasonably be used, or to cause a condition which is hazardous or potentially hazardous to public health, safety, or welfare; animals, birds, fish or other aquatic life or other organisms or plant. A WDL permits the discharge of wastewater to 'waters' in circumstances that would otherwise be an offence under the *Water Act 1992* (NT). The discharge of treated effluent from Manthathpe WwTP is authorised under WDL 201-2.

As detailed in Condition 28 of the WDL a Performance Improvement Plan will be developed that details the implementation of necessary improvement items identified through the environmental risk assessment process.

The performance improvement plan will identify measures as necessary to reduce or otherwise manage the impacts associated with a discharge in order to maintain the relevant environmental values. This includes the development of appropriate commitments, such as schedules for:

- Implementation of measures to rectify any non-compliance(s);
- Design studies for the improvement of wastewater treatment and discharge strategies and infrastructure; and
- Further monitoring and impact assessment.

The planning horizons for all Water Services Remote wastewater treatment facilities will be captured in the *PWC Wastewater Management Strategy*.

The emphasis for Power and Water for the immediate future at wastewater treatment sites that discharge to the environment is on:

- Providing appropriate infrastructure to remove, collect and treat centralised wastewater generated by communities;
- Operating and maintaining wastewater systems to protect the public from microbiological pathogens that can cause disease in the community and to minimise impacts of wastewater on the environment;
- Minimising adverse effects on the environment from the disposal of effluent to land, water and or water recycling, through prevention and continual

improvement in accordance with the relevant legislation, regulation, guidelines and PWC documentation; and

- Improving our understanding of the water cycle flows through the wastewater systems and the impacts of these on the waste stabilisation pond treatment performance.

An environmental risk assessment undertaken on the Manthathpe WwTP indicates:

- Risks to the assessment end-points, associated with the source, were assessed as having low to medium risk rankings. These rankings were associated with the low discharge volumes into a tidal estuarine environment, while higher risk rankings were associated with impacts to cultural values including human health risks through primary and secondary contact and aquatic food safety.
- The risk rankings may change as uncertainties associated with current assessments are addressed. A range of recommendations have been made in this risk assessment to address knowledge gaps and identify reasonable and practicable measures for improvement.

2. ENVIRONMENTAL VALUES

Beneficial Use Declarations (BUD's) maybe declared under section 73(1) of the *Water Act*. No BUD's are in place for this site. In the absence of BUD's, Environmental Values have been identified. Environmental Values are particulate values or uses of the environmental that are important for a healthy ecosystem or for public benefit, welfare, safety or health which require protection from the effects of pollution, waste discharges and deposits.

The receiving water body for this discharge is Sandfly Creek and subsequently Timor Sea at the Bonaparte Gulf.

The environmental values are:

- Environment;
- Cultural; and
- Aquaculture.

3. MANAGEMENT OBJECTIVES

The Power and Water 2019-20 *Statement of Corporate Intent* was tabled in parliament detailing Power and Water's commitment to government in setting out the Corporation's objectives, scope of business, strategies, funding mechanisms, approach to risk management and financial performance targets over a four year period commencing 1 July 2019. Under the *Statement of Corporate Intent* (PWC 2019), Power and Water will continue to deliver on our objective of providing safe and reliable services to our customers, while maintaining a focus on commercial sustainability.

Long-term goals of relevance to the licensed activity include:

- **Safety** – reach a proactive safety culture to achieve zero harm to our people, contractors and the public.
- **Operational performance** – to be a best-practice multi-utility that continuously improves the services we provide and asset management practices and leveraging synergies across our lines of business.
- **Environment** – to be a solid performer in environmental management.

4. 2019 IMPROVEMENT PLAN ACTIONS

Under this Improvement Plan, Power and Water will ensure that in order to minimise impacts associated with the licensed activity that:

- The discharge of treated effluent from the Manthathpe WwTP will be undertaken within the legal framework provided by the licence; and that
- Power and Water will progress the management actions identified in Attachment A within budgetary and resource constraints.

ATTACHMENT A - Power and Water Corporation Water Management Actions 2019-2021

Action No.	Action Identified	Action Progress	Timeframes	Status
				Completed = ✓
				In Progress = ✓
				On hold = !
No progress = ✘				
1	Characterise the risks associated with the discharge through continued monitoring of wastewater discharged to the environment.	<p>Routine wastewater quality monitoring programs have been developed, implemented and refined.</p> <ul style="list-style-type: none"> • Increase frequency of monitoring at selected sites to increase data sets. • Conduct inflow monitoring at selected sites to gain better understanding of pond performance. 	Established June 2015. This is an ongoing action	✓
2	Undertake a more robust Waste Stabilisation Pond Process Modelling Assessment in line with the PWC <i>Waste Stabilisation Pond Design Manual</i> . This is an updated assessment of pond performance.	Conduct assessments at selected communities where population growth is expected.	To be finalised at end of licence.	
3	Develop an action plan to address "very high" or above level risks* as identified in the risk assessment. The action plan is to include an assessment of the discharge water quality in relation to factors that may affect discharge water quality (i.e. pond design, operational and maintenance factors) with respect to environmental values.	No Very High level risks identified in environmental risk assessment.	2019	Not Required
4	Implement options to accurately quantify the volume of treated wastewater discharged to the environment.	Develop a risk-ranked program for installation of flow monitoring improvements. Flow meters have been installed progressively based on priority and budget availability. Flows at non-metered sites are estimated using water balances and climatic	Plan for Magflow Installation sent to DENR on 28 March 2018. This has is ongoing.	✓

Action No.	Action Identified	Action Progress	Timeframes	Status
				Completed = ✓
				In Progress = ✓
				On hold = !
No progress = ✘				
		data as per the methodology in the PWC environmental risk assessments.		
5	Develop and implement a PWC Desludging Program for all remote communities to inform a desludging works prioritisation list.	Schedule work orders per financial year based on funding availability. Conduct sludge surveys to inform the desludging program. <ul style="list-style-type: none"> Conduct sludge survey at Manthathpe ponds 	Ongoing	✓

* As per the PWC corporate risk approach

5. REFERENCES

- ANZECC, and ARMCANZ. 2000a. Australian and New Zealand Guidelines for Fresh and Marine Water Quality Volume 1 - The Guidelines. National Water Quality Management Strategy., Australian and New Zealand Environment and Conservation Council and Agriculture Resource Management Council of Australia and New Zealand.
- ANZECC, and ARMCANZ. 2000b. Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 2 - Aquatic Ecosystems Rationale and Background Information. National Water Quality Management Strategy., Australian and New Zealand Environment and Conservation Council and Agriculture Resource Management Council of Australia and New Zealand.
- DHCD. 2017. Department of Housing and Community Development. Indigenous Community Engineering Guidelines. Northern Territory Government, Darwin.
- DOH. 2011. Guidance Notes for Recreational Water Quality in the Northern Territory. Department of Health, Northern Territory Government, Darwin.
- PWC. Remote Operations. 2015. Wastewater Management Strategy 2015-2018 (January 2015)
- PWC AND NT EPA. 2014. Agreement Remote Community Waste Discharge Licences between Power and Water Corporation and Northern Territory Environment Protection Authority (17 November 2014)
- NHMRC. 2008. Guidelines for Managing Risks in Recreational Water. National Health and Medical Research Council, Australian Government, Canberra.
- NTEPA. 2014. Guidelines on Waste Discharge Licensing under the Water Act. Northern Territory Environment Protection Authority, Northern Territory Government.
- PWC. 2019. Power and Water Corporation 2019-2020 Statement of Corporate Intent. Power and Water Corporation, Darwin.