Remote Community Waste Discharge Licences
Waste Stabilisation Ponds

Performance Improvement Plan 2021

Minjilang Waste Discharge Licence 233-01

Water Services
Remote Water Planning
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PowerWater

Document History and Status

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1. INTRODUCTION

Power and Water Corporation operates the Minjilang Wastewater Treatment Plant (WwTP), located on Croker Island, 250 km north east of Darwin, Northern Territory. The wastewater treatment plant services a population of approximately 399 (DTFHC 2021) from the Minjilang community. 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 Minjilang WwTP is authorised under WDL 233-01.

As detailed in the Power and Water and NT EPA Agreement document (2014) a Performance Improvement Plan 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 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 Minjilang WwTP indicates:

- Risks to the assessment end-points, associated with the source, were assessed as having low risk rankings. These rankings were associated with very low discharge volumes to a tidal creek area with moderate flushing expected.
- 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 opportunities for improvement.

2. ENVIRONMENTAL VALUES

Beneficial Use Declarations (BUD's) may be 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 environment for this discharge is to a freshwater/ tidal creek.

The environmental values are:

- Environment;
- Cultural

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** – implement and sustain a proactive safety culture supported by effective safety management systems, governance and visible safety leadership.
- **Operational performance** – identify and adopt best practice methodologies across the organisation structure to deliver services to customers.
- **Environment** – ensure prudent, effective risk and governance practices, including environmental management.

4. 2021 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 Minjilang 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

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.	Routine wastewater quality monitoring programs developed, implemented and refined. • Increase frequency of monitoring at selected sites to increase datasets – Kalkarindji monitoring increased from biannually to quarterly	Established January 2017. This is an ongoing action.	✓
2	Verify *Remote Operations Waste Stabilisation Pond Performance Evaluation Model* for this facility with field monitoring data.	Completed in previous PIP. No longer required as wastewater monitoring data is available.	NA	✓
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 or above level risks identified in the Environmental Risk Assessment for this facility.	2021	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 data as per the methodology in the PWC environmental risk assessments.	Ongoing Funding requested, project currently in place	✗

Action No.	Action Identified	Action Progress	Timeframes	Status Completed = ✓ In Progress = ✓ On hold = ! No progress = ✗
		• Flow meter installation not deemed a priority at this time as discharge to the environment is considered to have low discharge volumes – installation at higher risk communities a priority		
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. • Sludge survey conducted at Minjilang ponds in 2019 • Desludging works deemed a priority at this time • Minjilang is on the desludge priority list, dependent on funding availability and ongoing discussions regarding suitable locations for sludge storage. • Currently a licence condition	2021-2022	!

*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.

DOH. 2011. Guidance Notes for Recreational Water Quality in the Northern Territory. Department of Health, Northern Territory Government, Darwin.

DTFHC. 2021. Indigenous Community Engineering Guidelines. Department of Territory Families, Housing and Communities, Northern Territory Government, Darwin.

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 2019-20 Statement of Corporate Intent. Power and Water Corporation, Darwin.

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)