



Drinking Water Quality Management Plan Report

Kowanyama Aboriginal Shire Council

SPID: 142

2023-2024 Financial Year

This report has been prepared in accordance with the Drinking Water Quality Management Plan Report Guidance Note.

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Introduction

This is the Drinking Water Quality Management Plan (DWQMP) report for Kowanyama Aboriginal Shire Council (KASC) for the financial year 2023-2024.

KASC is a registered service provider with identification (SPID) number 142. KASC is operating under an approved DWQMP to ensure consistent supply of safe quality drinking water in order to protect public health. This is done through proactive identification and minimisation of public health related risks associated with drinking water.

This DWQMP report includes:

- the activities undertaken over the financial year in operating our drinking water service
- drinking water quality summary
- summary of our performance in implementing our approved DWQMP

This report is submitted to the Regulator to fulfil our regulatory requirement, and is also made available to our customers through our website or for inspection upon request at council office.

1 Summary of scheme/s operated

Council manages the Kowanyama drinking water supply scheme and distributes treated water to the township of Kowanyama. The water supply scheme is comprised of multiple bore water sources, chlorination plant, service reservoirs, a pump station and distribution network.

Details of the scheme are noted in Table 1.

Table 1 – Summary of schemes

<i>Scheme</i>	<i>Water Source</i>	<i>Treatment processes</i>	<i>Treatment capacity</i>	<i>Towns supplied</i>
Kowanyama Water Supply	Great Artesian Basin – Kowanyama Bore 1,2 and 3	Chlorination	2ML/d	Kowanyama

2 DWQMP implementation

The implementation of the DWQMP is discussed in this section, and also captured in the other sections that follow.

3.1. Risk Management

The process of keeping drinking water safe is one of risk management. Through efficient operations and implementation of the DWQMP, Council has ensured effective risk management to assure safe quality of drinking water to our customers.

During the reporting period, Council supplied drinking water that complied with the water quality criteria set in the Australian Drinking Water Guidelines. There were no incidents during the year.

3.2. Monitoring

Council maintains comprehensive monitoring programs to ensure that the quality of water supplied to customers is safe. The monitoring programs assist to identify any issue before it becomes a significant water quality incident. The results from the verification monitoring for the reporting period are discussed in section 5.

Council also undertakes operational monitoring, which includes the planned sequence of measurements and observations to assess and confirm the performance of our preventive or control measures. Measurements are of operational parameters that indicate whether processes are functioning effectively.

To ensure timely actions on operational monitoring data, Council uses a water quality spreadsheet to track and provide weekly summaries of water quality data. These actions will provide Council with additional information to act on water quality data.

Quality assurance is important to guarantee consistently reliable and legally defensible results and ensure customers are provided with the best quality water.

Council has the following quality management systems in place:

- microbiology and chemical parameter samples are sent to the Cairns Regional Council Water Laboratory, which is a NATA accredited laboratory
- operations staff have been appropriately trained to undertake sampling.

3.3. Staff Awareness

Implementation of the DWQMP is the responsibility of the Essential Services Manager (ESM). The ESM discusses issues relating to the implementation with water (and sewer) staff using informal meetings as required. The ESM is responsible for ensuring that all staff have appropriate training and undertake appropriate procedures while implementing the DWQMP.

3 Risk Management Improvement Plan

Council maintains a culture of continuous improvement and are implementing the Improvement Plan of the DWQMP and making progress towards strengthening the management of the water supply. During the reporting period, Council implemented a number of actions including:

- reviewing the improvement program to better reflect the current operational conditions
- updating the DWQMP to reflect the changes in the installed infrastructure

The actions undertaken to implement the risk management improvement program are discussed in Table 2. Previous tasks which had been reported as completed in last year's annual report have been deleted.

Table 2 – Risk management improvement program implementation status

Kowanyama Water Supply

Ref	Component	Event	Improvement Actions	Target Date	Action taken to date	Status and revised target date	Responsible Officer / Position
18	Whole of Service	Insufficient disinfection, chlorate formation	Develop a sodium hypochlorite management procedure, including a written agreement with the chemical supplier to supply the newest stock available, onsite stock rotation to ensure oldest stock is used first and the application of relevant Australian Standards.	2023	Council now recording stock concentration and rotating stock	Completed	ESM
23	Whole of Service	Reservoir integrity breach	Repair rust damage to both reservoirs and replace the rubber seals on the roof, which have been attacked by birds	2023	Contract awarded for replacement of roof	Completed	ESM
24	Whole of Service	Misinterpretation of schematics	Find/develop drawings for critical parts of the system as required. Improve labelling of valves, sample points and dosing points to increase ease of operation,	2023	Drawings completed. Labelling to be completed	2025	ESM

			particularly for staff who are less familiar with the equipment/system.				
25	Whole of Service	Erroneous sampling results	Plan dedicated laboratory area, away from general office area.	Early 2023	New lab under construction- Completed October 2024	Completed	ESM
26	Whole of Service	Insufficient resourcing	Ensure current staff complete their already commenced training. Develop a register to identify ongoing training needs.	ongoing	Register template developed, although training records are maintained by HR. Requires updating	2025	ESM
30	Whole of Service	All Hazards	Undertake training on incident and emergency management. This should include working through a scenario.	Late 2023	ESM to source appropriate training	2025	ESM
32	Whole of Service	Lack of plant documentation and as-constructed drawings.	Upgraded hypochlorite plant to include OMM, drawings and valve labelling to improve documentation.	Late 2023	Documentation and labelling to be completed	2025	ESM
33	Whole of Service	Staff Continuity	Plan for alternative staff to assist ESM with EM Infrastructure with supervision and implementation of the DWQMP.	ongoing	KASC staff and roles continuously being reviewed	2025	ESM

34	Whole of Service	Calibration of instruments	Develop a calibration procedure and logsheet for benchtop analysers	2023	To be reviewed - new equipment has been introduced	2025	ESM
37	Reticulation	Unknown dead ends or underutilised services. Poorly understood isolation requirements.'	Services survey to locate all services.	2023	As-cons for 2024 completed, pipework to be added	2025	ESM
38	Whole of Service	Poor calibration of instruments.	Procedure for calibrating instruments and logsheet	2023	To be reviewed - new equipment being introduced	2025	ESM
43	Whole of Service	Lack of plant documentation and operating instructions including SCADA interface.	Documentation for new salt water chlorine generator including SCADA to be developed	2023	Plant to be reutilised and SCADA replaced	2025	ESM
44	Whole of Service	Lack of plant documentation and operating instructions for bore 3 filterbank.	Documentation for filterbank to be consolidated	2023	Documentation to be updated. Consideration to provide alternative filter media	2025	ESM
46	Whole of Service	SCADA hardware failure or unintentional	Develop system of backup and recovery	2023	SCADA to be replaced with	2025	ESM/KASC IT

		program interference			cyber-secure hardware		
47	Whole of Service	Cyber Security Event affecting SCADA - internal	Develop system to prevent, detect and recover from internal cyber attack	2023	SCADA to be replaced with cyber-secure hardware	2025	ESM/KASC IT
48	whole of Service	Cyber Security Event affecting SCADA - external	Develop systems to prevent, detect and recover from external cyber attack	2023	SCADA to be replaced with cyber-secure hardware	2025	ESM/KASC IT

4 Operational and Verification monitoring - water quality information and summary

This section discusses the compliance with the water quality criteria.

Verification and operational data have been taken from the data recorded on SWIMs during the period.

All laboratory data has been taken directly from external certified lab results.

Table 3 – Drinking water quality performance - verification monitoring

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Kowanyama Water Supply	E. Coli	Monthly at 4 sites (48)	129	< 1 CFU/100mL	0	Results from Cairns Regional Council Water Laboratory.
Kowanyama Water Supply	Total Coliforms	Monthly at 4 sites (48)	129	<1 CFU/100mL	0	Results from Cairns Regional Council Water Laboratory
Kowanyama Water Supply	Heterotrophic Plate Counts	Monthly at 4 sites (48)	129	<10 CFU/mL		Results from Cairns Regional Council Water Laboratory
Kowanyama Water Supply	E. Coli	Weekly at 8 town sites (rotational)	63	< 1 CFU /100ml	0	In-house testing at reservoir and rotational at town sites.
Kowanyama Water Supply	Multiple chemical parameters, including metals, compounds, conductivity, TDS, hardness and turbidity as	Quarterly at Bores 1 and 2 and Bore 3	<ul style="list-style-type: none"> One metal /physical / chemical test 	various	0	No exceedances for bore supply. Additional flouride test for town supply noted below

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
	listed in DWQMP					
Kowanyama Water Supply	Flouride	Quarterly at treatment shed	<ul style="list-style-type: none"> Additional 12 monthly flouride tests at reservoir 	1.5 mg/L		One flouride exceedance occurred 6/2/24. The non-compliant sample were reported to the regulator
Kowanyama Water Supply	Chlorates and Trihalomethanes	Quarterly at the Treatment Plant Outlet	2 Chlorate tests 2 total THM tests	0.25mg/L THM level 0.8 mg/L for Chlorate set as a value by Qld Health (not ADWG)	1	One chlorate non-compliant sample (7/5/24) was not reported to the regulator as the exceedance was not flagged by Cairns Lab and was not noted by staff on receipt of the lab reports. The value is not a ADWG guideline level hence the lack of notification. Discussion has been made with the lab to advise Council if a sample exceeds 0.8 mg/L.

Table 4. E. coli compliance with annual value

Kowanyama Potable												
Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	11	8	8	9	8	8	8	8	8	9	8	36
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	66	74	82	87	91	99	98	102	103	103	102	129
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

5 Incidents reported to the regulator

The incidents reported to the Regulator and management actions undertaken over the financial year are provided in this section.

Table 5 – Incidents reported to the regulator

Incident date	Scheme / location	Parameter / issue	Preventive actions
06/02/24	Kowanyama Drinking Water Supply	Incident– Quarterly Floride test showed a level slightly over the ADWG guideline Incident closed	Continue to monitor fluoride levels from each bore throughout the year and blend supplies to ensure level stays below 1.5 PPM
07/05/24	Kowanyama Drinking Water Supply	Incident - Chlorate exceedance discussed with The Regulator and reported, Incident closed	Council to check all chlorate lab reports regardless of whether Cairns Lab has noted the value. Council to continue to clean hypo storage units and measure strength of hypo in the drums.

7 DWQMP review outcomes

No reviews were undertaken during the reporting period. The next regular review is due before 1st July 2025

Table 7 – DWQMP review outcomes

Review component	Findings	Outcomes	Status of actions	Responsible Officer / Position
Nil reviews				

8 DWQMP audit findings

No audits were undertaken during the reporting period. The next audit is due before 1st March 2025

Table 8 – DWQMP audit findings and status

Item	Recommendation or OFI	Action	Status of Actions	Responsible Officer / Position
Nil Audits				