Port of Townsville Limited

Drinking Water Quality Management Plan

Annual Report 1 July 2024 to 30 June 2025

PORT OF TOWNSVILLE
delivering sustainable prosperity

Service Provider Identification Number (SPID): 570

PORT Water Distribution Scheme

CONTENTS

1. INTRODUCTION

This annual report documents the performance of Port of Townsville Limited's (Port) drinking water service for financial year 2024/25 with respect to water quality and performance in implementing the actions detailed in its drinking water quality management plan (DWQMP v7 dated 10 Feb 2025) as required under section 142 of *Water Supply (Safety and Reliability) Act 2008* (the Act). Port has been registered as a service provider under the *Water Supply (Safety and Reliability) Act 2008* (the Act) since 19 January 2015.

The report has been prepared in accordance with the *Guideline for the preparation, review and audit of drinking water quality management plans* by the Department of Regional Development, Manufacturing and Water (DRDMW), which provides a mechanism for providers to report publicly on their performance in managing drinking water quality.

2. OVERVIEW OF OPERATIONS

Port is responsible for its on-site potable water distribution network within the Port of Townsville, namely the Port Water Distribution Scheme, which includes Port owned and maintained potable water distribution mains across Port owned lands. This distribution scheme only services Port owned buildings, Port leased lands and Port berths for visiting ship connection.

The Port Water Distribution Scheme draws its drinking water supply from Townsville City Council's (TCC) reticulated supply through three metered supply points. Port does not store or have the capacity to treat potable water. Port has no influence over the quality of water distributed through its scheme and has no opportunity to treat water distributed through its scheme. Port relies solely on the municipal potable water supplier in providing potable water that meets all necessary standards, and no recycled water or alternate potable water sources are distributed by Port within the Port of Townsville. The management of water quality, until it is supplied to Port of Townsville, is the responsibility of TCC.

On a monthly basis, Port requests from TCC, and is supplied with a summary Certificate of Analysis on the potable water quality at the nearest reservoir to the Port to confirm compliance with the Australian Drinking Water Guidelines (ADWG).

Port is committed to ensuring that the water scheme is managed so that the supply adheres to the Public Health Act 2005 and the *Water Supply (Safety and Reliability) Act 2008* and does not constitute a hazard to employees or the public.

Table 1 details the water source, treatment processes, disinfection processes and other infrastructure of the scheme along with the context of the supply in terms of current population and demand.

Table 1: Infrastructure Details

Component		Details
Name of Scheme		Port Water Distribution Scheme
Operator		Port of Townsville Limited
Sources	Name	Townsville City Council Municipal Water Supply
	Type	Treated Water Supply
	% of supply	100%
Sourcing Infrastructure	Type (pumped/gravity/equipped bore/etc.)	Supply Mains
	Description	The Port Water Distribution Scheme is supplied by three water mains from the TCC Municipal Water Supply. One 200mm pipeline services the Western area of the port and a second 300 mm pipeline services the Eastern area of the port. The third water pipeline is approximately 100mm and services an outdoor area.
Are there any sources that **do not** undergo treatment prior to supply?		No
Treatment Plant	Not applicable. The Port Water Distribution Scheme has no treatment plants. All treatment is performed by the TCC Municipal Water Supply prior to water entering the Port Water Distribution Scheme.	
Are there any sources that **do not** undergo disinfection prior to supply?		No
Disinfection	Not applicable. The Port Water Distribution Scheme has no disinfection processes. All disinfection is performed by the TCC Municipal Water Supply prior to water entering the Port Water Distribution Scheme.	
Distribution and Reticulation Scheme	Pipe material	Ductile Iron/Polyethylene, PVC, copper, galvanized and stainless steel.
	Age range	15~ 50 years
	Approximate percentage % of total length	60% @ 50 year 40% @ 15 year
	Areas where potential long detention periods could be expected	N/A
	Areas where low water pressure (example < 12 m) could be expected during peak or other demand periods)	N/A
	Communities served	Port of Townsville Workplaces, Tenants and Port Users
	Population served	approx. 900
	Connections	106
	Demand	approx. 550 kL/d
Reservoirs	Not applicable. The Port Water Distribution Scheme has no reservoirs. All water storage is performed by the TCC Municipal Water Supply prior to water entering the Port Water Distribution Scheme.	
Water Quality Responsibility Changes	Upstream location	Townsville City Council – bulk supplier
	Downstream location	None

3. COMPLIANCE WITH WATER QUALITY CRITERIA FOR DRINKING WATER

Tables 4, 5, and 6 attached to this report provide a summary of the results of the operational and verification monitoring programs for the Port Water Distribution Scheme. Both monitoring programs were carried out as per the specifications stated in the DWQMP.

The results from the operational and verification monitoring programs have been compared against water quality criteria specified by the Regulator in the *Water Quality and Reporting Guideline for a Drinking Water Service*. This includes the health guideline values in the most current Australian Drinking Water Guidelines (ADWG), as well as the standards in the *Public Health Regulation 2018*.

The water quality results met the recommended values in the *E. coli* and fluoride standards and health guidelines in the ADWG.

The laboratory limit of reporting (LOR) for selenium was the same as the guideline limit from July 2024 to April 2025. Commencing in May 2025, Port transitioned to a different NATA certified laboratory (Eurofins), and the LOR for selenium is now below the Australian drinking water guideline (LOR 0.001mg/L, ADWG Health Based Guideline 0.01mg/L).

Due to the change in laboratory during the reporting period, the limit of reporting for Benzo(a)pyrene is the same as the guideline limit (0.00001 mg/L) since May 2025.

3.1 Appropriateness of Operational Monitoring Program

Port does not store or treat water in its Water Distribution Scheme. The only operational parameter under Port's control is residence time of water in its distribution scheme. Long residence times in the Port scheme can potentially result in low disinfectant residuals, microbial growth or regrowth and high concentrations of contaminants due to leaching or corrosion of system materials. Residual chlorine remains a useful measure of the potential for microbial growth and residence time of water in a system.

In accordance with the 2024 audit findings, an opportunity for improvement was identified, recommending the inclusion of field parameters—specifically visual, odour, and taste. This recommendation was formally adopted into the DWQMP v7 dated 10 Feb 2025, and effective in 2025 field sampling.

Furthermore, total chlorine was incorporated into the operational monitoring program. Field testing for total chlorine commenced in January 2025, and the results have been documented within this report. As these parameters were

introduced during the current reporting period, data availability is limited to samples collected between January and June 2025.

In the DWQMP Operational Limits for Residual Chlorine are assigned as between 0.2 to 0.5 mg/L. During 2024/25 there were three results recorded at PW06 (Port Tower, Level 2) below 0.2 mg/L for an operational monitoring site (December 2024, February 2025, and March 2025). The residual chlorine was recorded at the 2-minute flush time and again at the 15-minute time. At the 15-minute flush time improvement in residual chlorine was observed on all 3 occasions. Total chlorine levels remained within guideline values. This site, (PW06) is a known low demand area (as noted in the DWQMP). Flushing at this location results in increases residual chlorine at this site. Operational monitoring demonstrates that residual chlorine concentration declines mainly during hotter months. The Port's water distribution network at the Port Tower includes piping along the quay line that is exposed to direct sunlight and ambient heat, which is likely contributing to reduced residual chlorine levels. Port is in the process of insulating the exposed pipework in this area. Until insulation has been installed on the exposed pipework, temporary drinking water supply has also been provided to the Port Tower, and signage has been installed.

3.2 Appropriateness of Verification Monitoring Program

All parameters tested as part of the verification monitoring program met the ADWG. Port will continue to review the scope of testing and/or the frequency of testing for specific parameters.

The 2024 audit identified an opportunity for improvement, recommending the inclusion of BTEX and TPH in verification sampling to strengthen hazard identification. This recommendation was incorporated into the DWQMP v7 dated 10 Feb 2025. Analytical testing for BTEX and TPH/TRH was included in scheduled verification monitoring conducted in May 2025, and the results have been included in this report. As these parameters were introduced during the current reporting period, data is only available from the May sampling event.

Port has undertaken low-level Polynuclear Aromatic Hydrocarbons, (PAHs) analysis since 2019/20. Benzo(a)pyrene was not detected above the limit of reporting during the reporting period. As noted above, due to the change in laboratory during the reporting period, the limit of reporting for Benzo(a)pyrene is the same as the guideline limit (0.00001 mg/L) since May 2025.

Annual monitoring was conducted in May 2025 at Berths 3, 4, 5, 8, 9, and 10 for water that is provided to vessels. This sampling occurred directly from the outlet and then from the hose (attached to the outlet) following a short period of flushing. The results from the outlets and hoses met the ADWG guidelines for all parameters analyzed, including total metals, fluoride, nitrite, nitrate and *E-coli.*

The ADWG August 2018 amendment included health guidance values for PFOS (0.07 µg/L) and PFOA (0.56 µg/L). Port initially undertook PFAS sampling in November 2018 at the Operational monitoring sites under the DWQMP. Results showed for standard and TOPA analysis, that PFOS and PFOA was not detectable at any site. The results indicated that PFOS/PFOA is not present in the incoming water from TCC. As such, no PFAS testing was conducted in 2024/25. The ADWG was amended in June 2025 revising the health guidance values for PFOS (0.008 µg/L), PFOA (0.2 µg/L), and added health guidance for PFHxS (0.03 µg /L) and PFBS (1 µg/L). As a result, testing of PFAS is proposed in FY25-26.

The ADWG 6, version4 also included revised guidelines for lead (now 0.001mg/L) and manganese (0.1mg/L). These health guidelines have been adopted in this report for the 24/25 financial year.

3.3 Risk Management Improvement Program (RMIP)

Table 2 details the status of the improvement actions as detailed in the DWQMP.

Table 2: Risk management improvement program implementation status as at 30/06/2025. (As per the DWQMP v7 10/02/2025)

Action	Component	Improvement Actions	Target Date	Actions taken to date/status	Responsible officer /position	Complete
7	Drinking water supply to vessels	Upgrade backflow protection devices at key connection points on berths to ensure contaminants and pathogens are not introduced to distribution scheme.	March 2023	All water carts on berths have backflow devices installed and are available for use.	Manager Assets and Maintenance	Complete 08/11/2024
13	Develop a common understanding between TCC & the Port on drinking water infrastructure	A recommendation from the 2020 DWQMP audit recognised the complex nature of infrastructure on Port land and suggested a specific agreement with TCC and the Port to clearly identify asset ownership where responsibility is shared and/or transferred.	October 2025	Port and TCC are working towards documenting the drinking water infrastructure on Port land to mitigate this risk. GIS Plans supplied to TCC. TCC have responded. Agreement still required to close this action	Manager Assets and Maintenance Manager Climate & Environment	Ongoing

Action	Component	Improvement Actions	Target Date	Actions taken to date/status	Responsible officer /position	Complete
14	GIS schematics for drinking water assets	An opportunity for improvement highlighted in the 2024 DWQMP audit; continue to update GIS schematics with additional attribute data (e.g. pipe data) so that it can be easily queried if necessary	December 2026	Planning for GIS work in progress.	Environmental Advisor Manager Assets & Maintenance Engineer GIS Officer	Ongoing
15	Review hazard identification and risk assessment	An opportunity for improvement highlighted in the 2024 DWQMP audit; consider clearly identifying other piped networks at the Port to mitigate potential cross connection risks	December 2025	Planning for this work has commenced, with further mapping of piped networks planned	Environmental Advisor Assets Maintenance Planner	Ongoing
16	Risk Management	A recommendation from the 2024 DWQMP audit; consider developing a mains repair procedure including disinfection as well as improvements to storage of pipes and fittings	June 2026	Planning for this work has commenced.	Environmental Advisor Assets Maintenance planner Manager Assets and Maintenance	Ongoing

* As specified in DWQMP v7 dated 10/02/2025

3.4 Incidents and complaints

3.4.1 Incidents

There were no reportable incidents that occurred in 2024/25 financial year.

3.4.1 Complaints

No complaints were received about potable water during 2024/25.

4. DWQMP REVIEW

A review of the DWQMP v5.1 was undertaken in September 2024 which incorporated findings from the June 2024 audit. Audit and review outcomes are detailed in the 2023/24 annual report. Updated 'status of actions' are detailed in table 3 below. The review identified several changes which were made to the DWQMP and submitted to DRDMW (DWQMP revision 6) in November 2024. Further amendments to the DWQMP requested by the regulator were incorporated into the DWQMP (DWQMP revision 7 dated 10 February 2025) that was approved 12th February 2025.

The next review to the DWQMP is due 30 September 2026, the next audit is due 30 June 2028.

Table 3: DWQMP review outcomes (Review date: 30/09/2024, status of actions as of 30/06/2025)

Review component	Findings	Outcomes	Status of actions	Responsible officer/ position
2. Registered Service Details	Service providers contact details outdated	As per the recommendation from the 2024 audit – Update providers contact details	Completed	Environmental Advisor
	Review population size served, number of connections, demand data and 10-year projections	As per the recommendation from the 2024 audit – Update population size served, number of connections, demand data and 10-year projection in table 1 of DWQMP if necessary.	Completed	Environmental Advisor
	Clarify and make infrastructure details consistent regarding the number of connections from TCC (page 12 - text at top says 3 supply mains, Table 2 says 2 supply mains).	As per the recommendation from the 2024 audit – update table 2 DWQMP to reflect 3 supply mains	Completed	Environmental Advisor
3. Infrastructure Providing the Service	2024 Audit Non-conformance – Pressure and flow monitoring is no longer undertaken as per the	Amend Table 8 of DWQMP to reflect current pressure and flow monitoring status of the system, (as per the	Completed	Environmental Advisor

Review component	Findings	Outcomes	Status of actions	Responsible officer/ position
	Operational Monitoring program in the approved DWQMP.	recommendation from the 2024 audit)		
		As per the recommendation from the 2024 audit, Port will consider replacing the flow and pressure monitoring devices at the TCC connections by obtaining quotes and projected costs to replace real time pressure monitoring devices then completing a cost vs risk vs benefit analysis.	Flow monitoring data is available via TCC smart water meters. Regular manual monitoring of pressure is undertaken.	Environmental Advisor + Assets Maintenance Planner Risk assessment to be reviewed by Manager Climate & Environment, Environmental Operations Lead and Manager Assets & Maintenance &
4. Hazards Identification	There have been some personnel and title changes of positions listed in Table 4 of the DWQMP; however, responsibilities essentially remain unchanged.	Update personnel / position titles	Completed	Environmental Advisor
	Additional monitoring to assist in hazard identification	As per the 2024 audit recommendation – Add BTEX/TPH into verification sampling. Update work instruction and field parameters to include visual / odour / taste contamination in the operational monitoring	Completed	Environmental Advisor

Review component	Findings	Outcomes	Status of actions	Responsible officer/ position
	Continue to update GIS so that pipe attribute data (e.g. age, diameter, material) is easily queried if necessary.	As per the 2024 audit recommendation – continue to update POTL GIS with pipe attribute data	Planning for GIS work in progress.	Environmental Advisor Manager Assets & Maintenance GIS Officer Engineer
	There are other piped systems on site which could be considered in the risk assessment with potential for cross contamination.	As per the recommendation from the 2024 audit – At the next risk review, consider more clearly identifying other piped systems as cross connection risks and refer to the control measures that exist in those other systems, not just the measures that exist in the drinking water network (pressure and backflow prevention).	Planning for this work has commenced, with further mapping of piped networks planned.	Environmental Advisor Assets Maintenance Planner
6.2 Operation and maintenance procedures	There is no formal document describing repair, installation and disinfection of mains, the Maintenance Planner OFI/ Scheduler verbally described the process of super chlorination and achieving disinfectant contact time, and clearly understood the process well. Spare pipes and fittings were stored on site,	As per the recommendation from the 2024 audit – Consider developing a mains repair procedure including disinfection (including when required and how undertaken)	Planning for this work has commenced.	Environmental Advisor Assets Maintenance Planner
		As per the recommendation from the 2024 audit – Consider developing a plan for hygienic storage of spares	Planning for this work has commenced.	Manager Assets & Maintenance Assets Maintenance Planner

Review component	Findings	Outcomes	Status of actions	Responsible officer/ position
	but storage conditions could be improved.	As per the recommendation from the 2024 audit – Consider Implementing a plan for hygienic storage of spares	Planning for this work has commenced	Manager Assets & Maintenance Assets Maintenance Planner
	2020 Audit - A specific agreement to be put in place between Port and TCC to identify asset ownership and where responsibility is shared and/or transferred.	This action was incorporated into the RMIP in the 2020 review. The Port and TCC have been negotiating an agreement on asset ownership and maintenance responsibility. Port and TCC are continuing discussions to clarify meter location ownership and maintenance responsibility to establish an agreement.	In progress – RMIP# 13 development of a Port/TCC specific agreement.	Manager Climate & Environment Environmental Operations Lead Environmental Advisor
6.4 Risk Management Improvement Program (RMIP)	2024 Audit Non-Conformance – The due dates for actions in the RMIP were not met.	Table 12 to be updated to reflect new timeframes and status for RMIP actions in the updated DWQMP.	Complete	Environmental Advisor
6.4 Risk Management Improvement Program (RMIP).	RMIP actions are in progress and the DWQMP needs to be updated as noted in 6.4(a).	Table 12 to be updated to reflect new timeframes and status for RMIP actions in the updated DWQMP.	Complete	Environmental Advisor
7. Operational and Verification Monitoring Programs	Consider monitoring for additional parameters	As per the recommendation from the 2024 audit – Review and incorporate additional parameters if required	Complete	Environmental Advisor

Review component	Findings	Outcomes	Status of actions	Responsible officer/ position
Other	The verification monitoring program was not fully implemented in 2022 and 2023, with some samples missed. The missed samples were not reported as an event to DRDMW.	POTL has implemented a procedure whereby its environmental advisors manually review the data to ensure that all samples have been taken in accordance with the program under the DWQMP.	Complete	Environmental Advisor
Appendix One - Data	Review / Update the appendix data	Update appendix of DWQMP with most recent data from upstream provider (TCC).	Complete	Environmental Advisor

Table 4: Operational Program Monitoring Results 2024-25 (as per Table 13 DWQMP v7)

Scheme Name	Port Water Distribution Scheme
Scheme Component	Distribution
Year	2024/2025

Parameter	Units	Limit of reporting	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
Residual Chlorine	mg/L	0.02	monthly	48	48	-	N/A	0.03	1.80	1.00	Field test
Total Chlorine	mg/L	0.02	monthly	48	24*	5.0	N/A	0.26	2.40	1.42	Field test

* Total chlorine was introduced during the current reporting period in approved DWQMP v7 dated 10 Feb 2025; data availability is limited to 24 samples collected between January and June 2025.

Table 5: Verification Monthly Monitoring Results 2024-25 for E. coli (as per Table 14 DWQMP v7)

Scheme Name	Port Water Distribution Scheme											
Scheme Component	Distribution											
Year	2024/2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	4	4	4	4	4	4	4	4	4	4	4	4
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 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	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Laboratory	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	Eurofins	Eurofins
Unit	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml	CFU/100ml
Limit of reporting	1	1	1	1	1	1	1	1	1	1	1	1

Table 6: Verification Program Monitoring Results 6 monthly 2024-25 (as per table 14 DWQMP v7)

Scheme Name	Port Water Distribution Scheme										
Scheme Component	Distribution										
Parameter	Units	Limit of reporting LOR (ALS / Eurofins)**	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
pH	pH unit	0.01 / 0.1	six-monthly /annually	12	20	-	N/A	7.50	7.93	7.77	ALS / Eurofins
Turbidity	NTU	0.1 / 1	six-monthly /annually	12	20	-	N/A	0.10	0.2	0.1	ALS / Eurofins
Fluoride	mg/L	0.1 / 0.5	six-monthly /annually	12	20	1.5	0	<LOR	0.5	<0.5	ALS / Eurofins
Sulphate	mg/L	1 / 5	six-monthly /annually	12	20	-	N/A	<LOR	<5.0	<5.0	ALS / Eurofins
Chloride	mg/L	1 / 1	six-monthly /annually	12	20	-	N/A	12.0	30.0	16.3	ALS / Eurofins
Calcium	mg/L	1 / 0.5	six-monthly /annually	12	20	-	N/A	10	13	11.8	ALS / Eurofins
Magnesium	mg/L	1 / 0.5	six-monthly /annually	12	20	-	N/A	1.5	3.0	2.1	ALS / Eurofins
Potassium	mg/L	1 / 0.5	six-monthly /annually	12	20	-	N/A	1.4	3.0	2.0	ALS / Eurofins

Scheme Name	Port Water Distribution Scheme										
Scheme Component	Distribution										
Parameter	Units	Limit of reporting LOR (ALS / Eurofins)**	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
Sodium	mg/L	1 / 0.5	six-monthly /annually	12	20	-	N/A	2.0	18.0	11.5	ALS / Eurofins
Nitrate	mg/L	0.01 / 0.02	six-monthly /annually	12	20	50	0	<LOR	0.10	0.06	ALS / Eurofins
Nitrite	mg/L	0.01 / 0.02	six-monthly /annually	12	20	3	0	<LOR	<LOR	<LOR	ALS / Eurofins
Heavy Metals											
Aluminium (Total)	mg/L	0.01 / 0.05	six-monthly /annually	12	20	-	N/A	<LOR	0.06	0.04	ALS / Eurofins
Antimony (Total)	mg/L	0.001/ 0.005	six-monthly /annually	12	20	0.003	0	<LOR	<LOR	<LOR	ALS / Eurofins
Arsenic (Total)	mg/L	0.001 / 0.001	six-monthly /annually	12	20	0.01	0	<LOR	0.001	<0.001	ALS / Eurofins
Barium (Total)	mg/L	0.001 / 0.005	six-monthly /annually	12	20	2	0	0.024	0.036	0.031	ALS / Eurofins
Boron (Total)	mg/L	0.05 / 0.05	six-monthly /annually	12	20	4	0	<LOR	<LOR	<LOR	ALS / Eurofins

Scheme Name	Port Water Distribution Scheme										
Scheme Component	Distribution										
Parameter	Units	Limit of reporting LOR (ALS / Eurofins)**	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
Cadmium (Total)	mg/L	0.0001 / 0.0002	six-monthly /annually	12	20	0.002	0	<LOR	<LOR	<LOR	ALS / Eurofins
Chromium (Total)	mg/L	0.001 / 0.001	six-monthly /annually	12	20	0.05	0	<LOR	0.002	<LOR	ALS / Eurofins
Copper (Total)	mg/L	0.001 / 0.001	six-monthly /annually	12	20	2	0	<LOR	0.073	0.015	ALS / Eurofins
Iron (Total)	mg/L	0.05 / 0.05	six-monthly /annually	12	20	-	N/A	<LOR	0.07	<LOR	ALS / Eurofins
Lead (Total)	mg/L	0.001 / 0.001	six-monthly /annually	12	20	0.005	0	<LOR	0.001	<0.001	ALS / Eurofins
Manganese (Total)	mg/L	0.001 / 0.005	six-monthly /annually	12	20	0.1	0	<LOR	<LOR	<LOR	ALS / Eurofins
Mercury (Total)	mg/L	0.0001 / 0.0001	six-monthly /annually	12	20	0.001	0	<LOR	<LOR	<LOR	ALS / Eurofins
Molybdenum (Total)	mg/L	0.001 / 0.005	six-monthly /annually	12	20	0.05	0	<LOR	<LOR	<LOR	ALS / Eurofins
Nickel (Total)	mg/L	0.001 / 0.001	six-monthly /annually	12	20	0.02	0	<LOR	0.002	<LOR	ALS / Eurofins

Scheme Name	Port Water Distribution Scheme										
Scheme Component	Distribution										
Parameter	Units	Limit of reporting LOR (ALS / Eurofins)**	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
Selenium (Total)	mg/L	0.01 / 0.001	six-monthly /annually	12	20	0.01	0	<LOR	<LOR	<LOR	ALS / Eurofins
Silver (Total)	mg/L	0.001 / 0.005	six-monthly /annually	12	20	0.1	0	<LOR	<LOR	<LOR	ALS / Eurofins
Uranium (Total)	mg/L	0.001 / 0.005	six-monthly /annually	12	20	0.017	0	<LOR	<LOR	<LOR	ALS / Eurofins
Zinc (Total)	mg/L	0.005 / 0.005	six-monthly /annually	12	20	-	N/A	<LOR	0.025	0.012	ALS / Eurofins
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Acenaphthylene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Anthracene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Benz(a)anthracene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins

Scheme Name	Port Water Distribution Scheme										
Scheme Component	Distribution										
Parameter	Units	Limit of reporting LOR (ALS / Eurofins)**	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
Benzo(a)pyrene	mg/L	0.000005 / 0.00001	six-monthly /annually	12	20	0.00001mg/L *	0	<LOR	<LOR	<LOR	ALS / Eurofins
Benzo(a)pyrene TEQ (zero)	mg/L	0.000005 / N/A	six-monthly /annually	-	5***	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Benzo(b+j) & Benzo(k)fluoranthene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Benzo(g.h.i)perylene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Chrysene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Dibenz(a.h)anthracene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Fluoranthene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	0.0001	<LOR	ALS / Eurofins
Fluorene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Indeno(1.2.3.cd)pyrene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	<LOR	<LOR	ALS / Eurofins

Scheme Name	Port Water Distribution Scheme										
Scheme Component	Distribution										
Parameter	Units	Limit of reporting LOR (ALS / Eurofins)**	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
Naphthalene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	0.07mg/L*	N/A	<LOR	<LOR	<LOR	ALS / Eurofins
Phenanthrene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	0.150mg/L*	N/A	<LOR	0.0001	<LOR	ALS / Eurofins
Pyrene	mg/L	0.00002 / 0.00001	six-monthly /annually	12	20	0.150mg/L*	N/A	<LOR	0.0001	<LOR	ALS / Eurofins
Sum of polycyclic aromatic hydrocarbons	mg/L	0.000005 / 0.00001	six-monthly /annually	12	20	-	N/A	<LOR	0.0004	<LOR	ALS / Eurofins
Total Recoverable (Petroleum) Hydrocarbons 2013 NEPM Fractions											
TRH >C10-C40 (total)*	mg/L	0.1	six-monthly /annually	12	15	-	N/A	<LOR	<LOR	<LOR	Eurofins
TRH C6-C10	mg/L	0.02	six-monthly /annually	12	15	-	N/A	0.07	0.12	0.09	Eurofins
BTEX											
Benzene	mg/L	0.001	six-monthly /annually	12	15	0.001	0	<LOR	<LOR	<LOR	Eurofins

Scheme Name	Port Water Distribution Scheme										
Scheme Component	Distribution										
Parameter	Units	Limit of reporting LOR (ALS / Eurofins)**	Frequency of sampling	No. samples required to be collected per annum (as per approved DWQMP)	Total No. samples collected and tested	Water Quality criteria (ADWG health guideline mg/L)	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Laboratory name
Toluene	mg/L	0.001	six-monthly /annually	12	15	0.8	0	<LOR	<LOR	<LOR	Eurofins
Ethylbenzene	mg/L	0.001	six-monthly /annually	12	15	0.3	0	<LOR	<LOR	<LOR	Eurofins
Xylenes – Total	mg/L	0.003	six-monthly /annually	12	15	0.6	0	<LOR	<LOR	<LOR	Eurofins

Notes: Guideline values expressed in mg/L unless otherwise indicated. * Supplementary Guideline value referenced: Australian Guidelines for Water Recycling: Augmentation of Drinking Water Supplies, 2008. – indicates that no guideline value is specified. **Port of Townsville primary analytical laboratory is Eurofins as of May 2025, some LORs have changed due to this change. *** Benzo(a)pyrene TEQ (zero) no longer included in analysis suite as of May 2025 and not specified as a parameter in the DWQMPv7. ADWG V6 revised June 2025 health guideline values for Lead and Manganese have been adopted in this report.

5. ACRONYMS AND GLOSSARY

ADWG	Australian Drinking Water Guidelines
ALS	Australian Laboratory Services
CFU/100ml	Colony forming units per 100 millilitres
DNRME	Department of National Resources, Mines and Energy
E. coli	*Escherichia coli*, a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
LOR	Limit of Reporting
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
org/100ml	Organisms per 100 millilitres
Port	Port of Townsville Limited
TCC	Townsville City Council
µg/L	Micrograms per litre
<	Less than