Ministerial Statement 1219 2024-25 Compliance Assessment Report

Beenyup Wastewater Ocean Outlets into Marmion Marine Park

WATER CORPORATION

Document History

Version	Author	Reviewed by	Date
1	C Byers	Danielle Van Zwol	07/07/2025
2		Julia Phillips	18/07/2025

Contents

1. Introduction

Water Corporation operates the Beenyup Water Resource Recovery Facility (WRRF) in metropolitan Perth, which treats approximately 116 Megalitres (ML) of wastewater per day to produce advanced secondary treated wastewater (TWW). The TWW was traditionally discharged to the sea through two ocean outlets at Ocean Reef into Marmion Marine Park. Discharge commenced from Outlet A in 1978 and Outlet B in 1992.

Stage 1 of Water Corporation's Perth Groundwater Replenishment Scheme (GWRS) consists of a 14 Gigalitre per year (GL/year) capacity plant. Secondary TWW from the Beenyup WRRF is diverted into the Advanced Water Recycling Plant (AWRP) and further treated via ultrafiltration (UF), reverse osmosis (RO) and ultraviolet (UV) disinfection processes to drinking water standard for recharge of the confined aquifers under Licence L9034/2017/1.

The AWRP reduces the environmental impact of potable water extraction from the aquifer but with a corresponding reduction in the volume and change to the composition of the TWW being discharged to the marine environment through the ocean outlets. The Stage 2 expansion increased the capacity of the AWRP to 28 GL/year and treats a larger proportion of the secondary TWW from the Beenyup WRRF for groundwater recharge which further reduces discharge to the ocean.

Ministerial Statement 1219 is to operate the Beenyup Wastewater Ocean Outfall into the Marmion Marin Park that are associated with the Beeyup Water Resource recovery Facility and the Advanced Water Recycling Plant. The life of the ocean outlets is anticipated to be 100 years (from 2023). This Compliance Assessment Report (CAR) fulfils the requirements of MS1219, specifically condition D2-1, covering the reporting period between April 2024 and June 2025 (2024-25).

2. Implementation Status

Most MS1219 obligations are in 'Operations' status and detailed in the OEPA Audit Table (Phase column) contained within the 2024/25 Statement of Compliance as submitted to DWER in conjunction with this report.

3. Compliance

3.1 Statement of compliance

Please refer to the 2024/25 Statement of Compliance as submitted to DWER in conjunction with this report (2024/25 SoC Nexus link #197169074).

3.2 Non-compliances

There were no non-compliances for the reporting period, as defined in the Statement of Compliance.

3.3 Internal / external audit results

Internal HSE audits were completed for the Advanced Water Recycling Plant and the Beenyup WRRF in June 2025. Both facilities influence our ability to achieve and maintain the environmental objectives within the marine waters surrounding the ocean outfalls. Audit findings were primarily procedural with no non-compliances in terms of discharge quality and compliance against MS1219. In addition, this report constitutes an internal audit by the proponent against the conditions and commitments of MS 1219. In terms of external audits, DWER attend the Beenyup WRRF on 17 February 2025. No audit report has been received to date.

3.4 Complaints register

Water Corporation has been actively engaging with community members and stakeholders in response to comments and enquiries. Engagement has included:

- supporting the independent investigations led by DWER into community concerns about marine water quality at Mullaloo Beach and the surrounding marine environment through the provision of water quality, environmental, and performance data
- maintaining regular communication with representatives of the Mullaloo Collective Group through various channels, including the office of MP Caitlin Collins
- remaining engaged with the Group's representatives and continuing to address their concerns where possible.

4. Ocean Monitoring and Management

4.1 Proposal Extent

Specific to Condition A1-1 and maximum extents, discharge of TWW from Outlet A and Outlet B for the 2024/25 reporting period was within the specified limits.

Table 1 2024-25 Treated wastewater discharge limits

Proposal Element	Maximum extent	Discharge of TWW 2024/25
Total discharge from Outlet A and Outlet B	Up to 150 ML/day	139.91 ML/day
Mean monthly nutrient discharge from Outlet A and Outlet B for total phosphorous	Up to 1650 kilograms per day	907 kg/day
Mean monthly nutrient discharge from Outlet A and Outlet B for total nitrogen	Up to 3.6 tonnes per day	1718 kg/day

4.2 Marine Environmental Management

In accordance with Condition B1-2 marine monitoring for the reporting period was undertaken in according to the Beenyup Ocean Outlets Marine Environmental Monitoring and Management Plan (Version 11, Oct 2023).

In accordance with the Plan, the following environmental quality objectives (EQOs) were assessed:

- Maintenance of Ecosystem Integrity
- Maintenance of Aquatic Life for Human Consumption
- Maintenance of Primary and Secondary Contact Recreation, and
- Maintenance of Aesthetic Quality

The extent to which the EQOs were met was assessed against a suite of Environmental Quality Criteria (EQC), consisting of Environmental Quality Guidelines (EQG) and Environmental Quality Standards (EQS).

The compliance assessment summary for 2024-25 is shown in Table 2 below and demonstrates that all EQO's were achieved during the reporting year. The compliance summary uses colour coding to represent the extent to which the EQC were met (refer to Table 1).

Table 2 Compliance Summary Report Card Legend

Management response	Legend
Monitor: EQG & EQS met (continue monitoring)	
Investigative: EQG not met (investigate against EQS)	
Action: EQS not met (management response required)	

Table 3 2024-25 Marine Monitoring Compliance Report Card

Maintenance of Ecosystem Integrity		EQC	Comments	Status
Toxicants in treated wastewater (TWW)	Bioaccumulating toxicants	EQG 1	Concentrations of cadmium and mercury in the undiluted TWW stream were below their limit of reporting and the ANZG (2018) 80% species protection guidelines (36 and 1.4 µg/L, respectively).	
	Non-bioaccumulating toxicants and initial dilution	EQG2	Initial dilution on 19/02/2025 (1:370) was sufficient to reduce non-bioaccumulating contaminant concentrations to below their ANZG (2018) 99% species protection guidelines.	
	Total Toxicity of the Mixture (TTM)	EQG 3	The TTM for the additive effect of ammonia, copper, and zinc after initial dilution (0.51) was below the ANZG (2018) guideline of 1.0	
	Whole of Effluent Toxicity (WET)	EQG 4	The lowest NOEC during the reporting period was 50%. Only two dilutions with background seawater are required to achieve this NOEC, which is lower than the worst-case dilutions achieved at the LEPA boundary during the monitoring period (1:370).	
Nutrient enrichment	Chlorophyll-a	EQG 1	Median chlorophyll-a concentration within the high ecological protection area (HEPA; 0.3 µg/L) was lower than the 80th percentile of historical reference site concentrations (0.4 µg/L).	
	Chlorophyll-a	EQS 1	Median chlorophyll-a concentration within the high ecological protection area (HEPA) was below than the 80th percentile of historical reference sites in two consecutive years.	
	Light Attenuation Coefficient (LAC)	EQG 2	Median LAC within the HEPA (0.083 Log10/m) was lower than the 80th percentile of historical reference sites (0.093 Log10/m).	
Phytoplankton blooms	Phytoplankton biomass (measured as chlorophyll-a)	EQG 1	Median chlorophyll-a concentrations exceeded three times the median of reference sites on one occasion (18 February 2025).	Refer to note below
		EQS 1	Median chlorophyll-a concentration exceeded three times the median of reference sites on one occasion in the 2024-2025 non-river flow period and five times in the 2023-2024 non-river flow period.	Refer to note below
		EQG 2	Phytoplankton biomass, measured as chlorophyll-a, did not exceed three times the median chlorophyll-a concentration of historical	

Maintenance of Ecosystem Integrity		EQC	Comments	Status
			reference sites (0.6 µg/L) on more than 25% of occasions at all four HEPA sites.	
		EQS 2	The EQS was not exceeded in two consecutive years.	
Physical-chemical stressors	Organic enrichment	EQG 1	Dissolved oxygen saturation within the HEPA was always above 90% saturation.	
	Salinity	EQG 2	Median salinity was between the 20th and 80th percentiles of the natural salinity range within the notional HEPA (at 100, 350, 1000, and 1500 m from the outlet).	

Note: EQS for phytoplankton blooms was not exceeded as the median phytoplankton biomass (measured as chlorophyll-a) only exceeded three times median chlorophyll-a concentration of historical reference sites on one occasion in 2024–25.

Maintenance of Seafood Safe for Human Consumption		EQC	Comments	Status
Microbiological contaminants (outlet sites)	Thermotolerant coliforms (TTC)	EQG:	Median TTC concentrations derived from 220 samples collected over the 2021-22, 2022-23, 2023-24 and 2024-2025 sampling seasons was at the limit of reporting (<10 CFU/100 mL) and below the 14 CFU/100 mL criteria.	
			The 90th percentile was equal to the limit of reporting (<10 CFU/100 mL) and below the 21 CFU/100 mL criteria.	
Microbiological contaminants (shoreline sites)		EQG:	Median TTC concentrations derived from 208 samples collected over the 2022-2023 to 2024-2025 sampling seasons was at the limit of reporting (<10 CFU/100 mL) and below the 14 CFU/100 mL criteria.	
			The 90th percentile was equal to the limit of reporting (<10 CFU/100 mL) and below the 21 CFU/100 mL criteria.	
Algal biotoxins	Toxic phytoplankton species	EQG:	During the 2024-2025 monitoring period, there were no recorded instances of toxic phytoplankton species exceeding the Western Australian Shellfish Quality Guidelines.	
Environmental Quality Indicator		**EQC**	**Comments**	**Status**
Faecal pathogens (outlet sites)	Enterococci spp.	EQG 1	The 95th percentile of *Enterococci* spp. concentrations (<10 MPN/100mL) was lower than the 200 MPN/100mL.	
		EQG 2		
Faecal pathogens (shoreline sites)2		EQG 1	The 95th percentile of *Enterococci* spp. concentrations (<10 MPN/100mL) was lower than the 200 MPN/100mL.	
		EQG 2		
Algal biotoxins	Phytoplankton (cell concentration)	EQG	During the 2024-2025 monitoring period, there were no recorded instances of toxic phytoplankton species exceeding the Western Australian Shellfish Quality Guidelines.	

Environmental Quality Indicator	EQC	Comments	Status
Nuisance organisms	EQG	Nuisance organisms were not present in excessive amounts.	
Faunal deaths	EQG	There were no instances of dead marine organism observed.	
Water clarity	EQG	Measurements of light attenuation determined that the natural visual clarity of the water was reduced by ~10% (i.e. <20%).	
Colour	EQG	There was a noticeable colour variation (brown tones) on one (10%) sampling occasions.	
Surface films	EQG	No surface films or oil were recorded on any sampling event	
Surface debris	EQG	No floating debris or matter was visible on the surface on any sampling occasion.	
Odour	EQG	No noticeable odour was detected on any sampling occasion.	

5. Audit table

The OEPA audit table is included in the 2024/25 Statement of Compliance as submitted to DWER in conjunction with this report.

6. Stakeholder Consultation

All reports, reviews and management plans relating to the Beenyup Wastewater Ocean Outlets into Marmion Marine Park are available on the Water Corporation's website as per the relevant MS1219 conditions:

https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Perth-monitoring-program

This report shall also be made available on the above link after DWER submission.