



NOVEMBER 2025

# MONTHLY CONSTRUCTION WATER QUALITY MONITORING REPORT

November 2025  
Project No.: 3200-0645  
Project: Transgrid Maragle 500/330 kV Substation  
Private & Confidential

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## APPENDICES

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## ABBREVIATIONS

Acronym	Full Form
°C	degrees Celsius
µS/cm	micro Siemens per centimetre
%	percent
4WD	Four wheel drive
Ag	Silver
Al	Aluminium
ALS	ALS Limited
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australian and New Zealand Guidelines
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
As	Arsenic
Baseline Report	'Baseline Water Quality Report' (NGH, 2024)
CaCO <sub>3</sub>	Total Hardness
Cd	Cadmium
COA	'Certificate of Analysis' (ALS, 2025a)
COC	Chain of Custody
Cr	Chromium
Cu	Copper
DGV	Default Guideline Values
DO	Dissolved Oxygen
EC	Electrical Conductivity
EIS	Environmental Impact Statement
EPL	Environmental Protection Licence
Fe	Iron
Field Sheet	'Water Quality Monitoring Field Data Sheet' (UGL, 2025)
Hg	Mercury
km	kilometres
KNP	Kosciuszko National Park
kV	kilovolt
LOR	limit of reporting
mg/L	milligram per litre
mm	millimetre
Mn	Manganese
mV	millivolt
NATA	National Association of Testing Authorities, Australia

## ABBREVIATIONS

Acronym	Full Form
NEM	National Energy Market
NGH	NGH Pty Ltd
Ni	Nickel
NSW	New South Wales
NTU	Nephelometric Turbidity Unit
Pb	Lead
ppm	parts per million
Pty Ltd	Proprietary Limited
QA/QC Assessment	'QA/QC Compliance Assessment to assist with Quality Review' (ALS, 2025b)
QCR	'Quality Control Report' (ALS, 2025c)
RP	reactive phosphorus
RS	Reference Site
Snowy 2.0	Snowy Scheme expansion project (EPBC 2018/8322)
Snowy Hydro	Snowy Hydro Limited
Snowy Scheme	Snowy Mountains Hydro-electric Scheme
SPC	specific conductance
SSGV	Site Specific Guideline Values
SW	surface water
SWQ	surface water quality
TDS	Total Dissolved Solids
The Methodology	'Pre-construction Water Quality Monitoring Program and Methodology' (NGH, 2022)
The Project	Construction of a 330 kV substation and overhead transmission lines between Nurenmerenmong, NSW and Cabramurra, NSW
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TP	Total Phosphorus
Transgrid	The Trustee for the NSW Electricity Operations Trust
TSS	Total Suspended Solids
UGL	UGL Limited
WQO	water quality objectives
Zn	Zinc

## 1 BACKGROUND

In 2020 Snowy Hydro Limited (Snowy Hydro) obtained approval (EPBC 2018/8322) to expand the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme), by linking the existing Tantangara and Talbingo reservoirs through a series of underground tunnels and constructing a new underground hydro-electric power station (Snowy 2.0).

To connect Snowy 2.0 to the National Energy Market (NEM), a new transmission connection was required. The Trustee for the New South Wales (NSW) Electricity Operations Trust (TransGrid) is constructing a 330 kilovolt (kV) substation and overhead transmission lines (the Project) to facilitate the connection of Snowy 2.0 to the existing electrical transmission network. The Project is located within Kosciuszko National Park (KNP) between Nurenmerenmong and Cabramurra, NSW, approximately 27 kilometres (km) east of Tumbarumba, NSW (Figure 1). UGL Limited (UGL) has been engaged on behalf of Transgrid to undertake the Project.

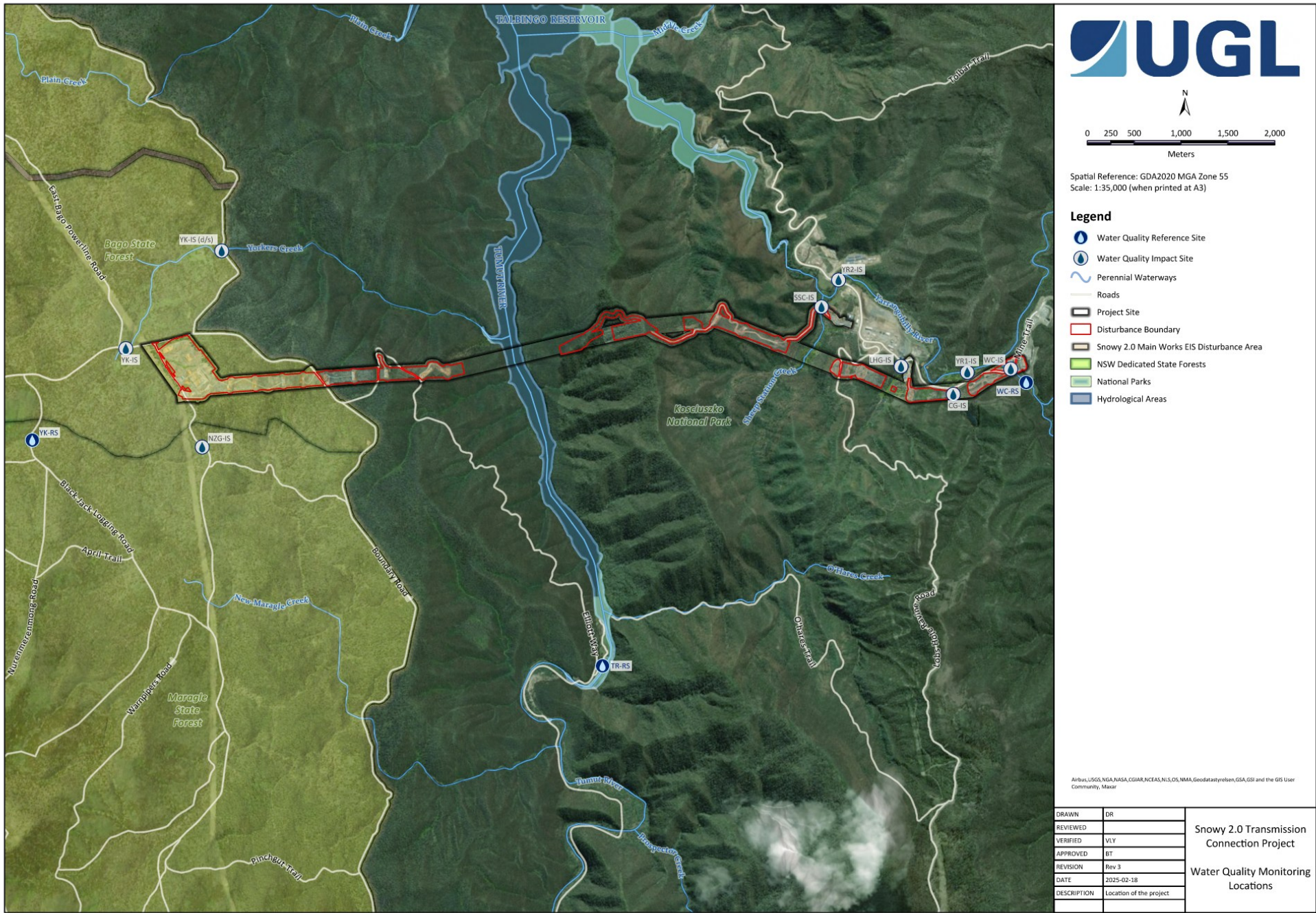


FIGURE 1 LOCALITY OF THE PROJECT AND SWQ MONITORING LOCATIONS

## 2 INTRODUCTION

The Project is adjacent to, and forms part of, the Snowy 2.0 project area and is located within KNP, an area of high conservation value. A total of 22 mapped waterways, tributaries of Yarrangobilly River and Tumut River, transect the Project Boundary (Figure 1).

One of the conditions of approval to meet the requirements outlined in the 'Environmental Impact Statement' (EIS) (Jacobs, 2020) and the Project's Environmental Protection Licence (EPL 21753) is to undertake regular surface water quality (SWQ) monitoring to mitigate environmental impacts on SWQ.

Pre-construction SWQ monitoring was undertaken by NGH Pty Ltd (NGH) between March 2022 and February 2024 to determine site specific baseline values for SWQ parameters prior to Project construction works. The pre-construction SWQ monitoring was undertaken using the 'Pre-construction Water Quality Monitoring Program and Methodology' (the Methodology) developed by NGH in 2022 (refer Section 3). Two years of pre-construction SWQ monitoring was analysed and summarised in the 'Baseline Water Quality Report' (Baseline Report) (NGH, 2024). The results were used to determine seasonal Site Specific Guideline Values (SSGV) for ongoing SWQ monitoring during the construction phase.

Construction for the Project commenced in March 2024. Construction SWQ monitoring will be undertaken by UGL on a monthly basis as per the revised methodology outlined in Section 3 to identify potential changes to SWQ that may be associated with the Project. SW samples from the construction SWQ monitoring would be analysed and presented in monthly Construction Water Quality Monitoring Reports.

### 3 METHODOLOGY

The Methodology was prepared by NGH in 2022 to support the pre-construction SWQ monitoring for the Project. The Methodology detailed the water quality objectives (WQO) for the Project, identified the monitoring locations and outlined the methodology for surface water (SW) sampling during the pre-construction phase. The Methodology (NGH, 2022) took into account the Project location within an area of high conservation value where the WQO for physical and chemical stressors, as outlined in the ‘Australian and New Zealand Guidelines for Fresh and Marine Water Quality’ (ANZG) (ANZG, 2018), includes no change in biodiversity beyond natural variability and where possible, there should also be no change in water/sediment chemical and physical properties, including toxicants.

Monitoring locations are outlined in Table 1. Figure 2 and Figure 3 show the water quality monitoring locations in relation to the Project and Snowy 2.0.

The Methodology (NGH, 2022) has been revised for construction SWQ monitoring by taking into account the seasonal SSGV set out in the Baseline Report (NGH, 2024) (refer to Section 4.2).

Construction SWQ monitoring would be analysed against the seasonal SSGV where available and appropriate. The Default Guideline Values (DGV) for Upland Rivers (ANZG, 2018) would be applied to water quality parameters that were not assessed in the Baseline Report (NGH, 2024) or where a guideline range is more appropriate. Table 2 outlines the seasonal SSGV and DGV used to compare construction SWQ to pre-construction SWQ.

**Table 1 SWQ monitoring locations outlined in the Methodology (NGH, 2022)**

WATER QUALITY MONITORING LOCATIONS					
ID	Waterway	Site Type	Catchment	Latitude	Longitude
WC-RS	Wallace Creek	Reference	Yarrangobilly River	-35.794258	148.415253
WC-IS	Wallace Creek	Impact		-35.792982	148.413404
CG-IS	Cave Gully	Impact		-35.795495	148.406665
YR1-IS	Yarrangobilly River	Impact		-35.793358	148.408277
LHG-IS	Lick Hole Gully	Impact		-35.792890	148.400445
YR2-IS	Yarrangobilly River	Impact		-35.784656	148.392921
SSC-IS	Sheep Station Creek	Impact		-35.793243	148.391046
TR-RS	Talbingo Reservoir	Reference	Talbingo Reservoir	-35.822094	148.365690
YK-RS	Yorkers Creek	Reference	Yorkers Creek	-35.801126	148.297979
YK-IS (D/S)	Yorkers Creek	Impact		-35.782684	148.320040
NZG-IS	New Zealand Gully	Impact		-35.801575	148.318051
YK-IS	Yorkers Creek	Impact		-35.792209	148.308878

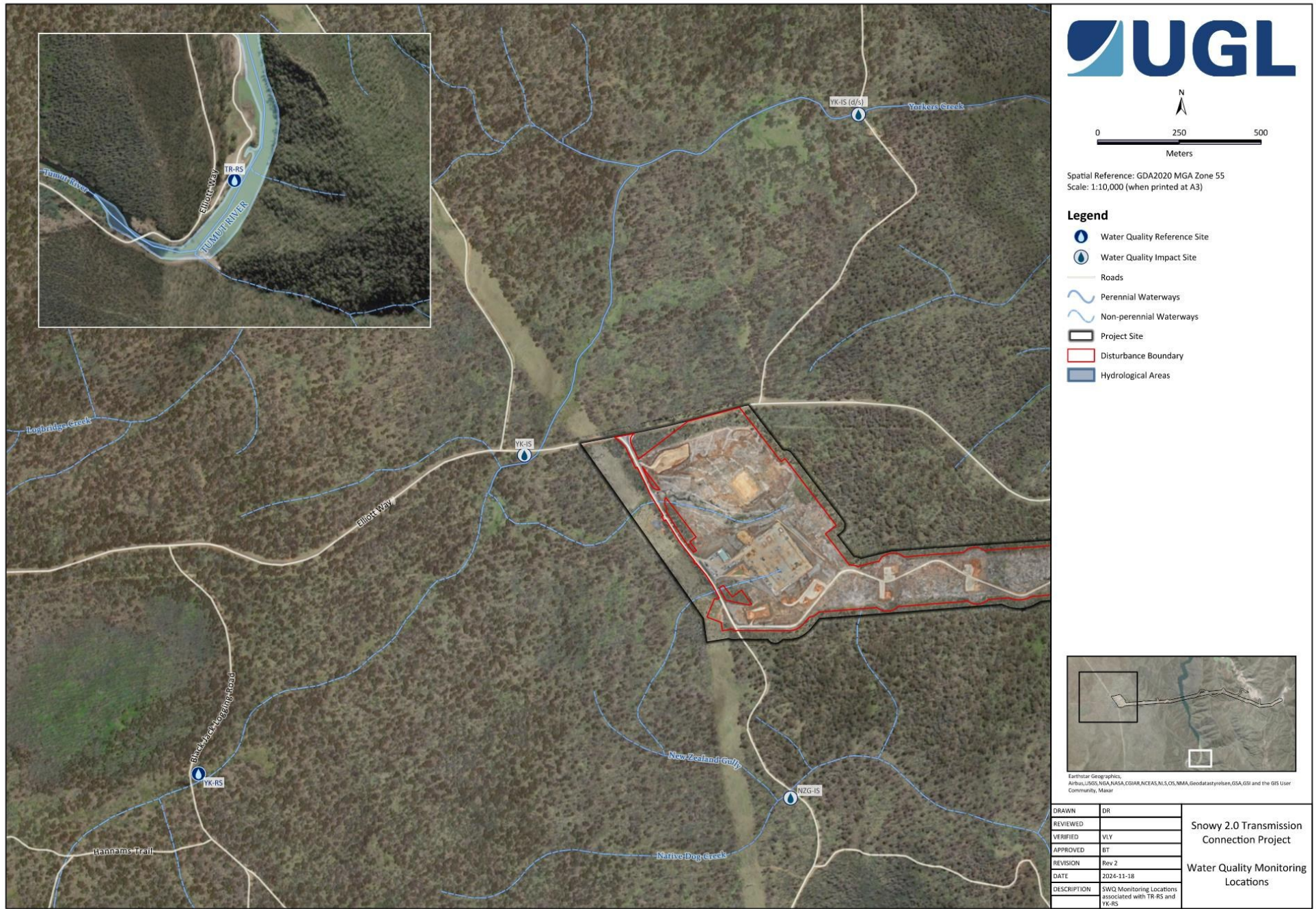


FIGURE 2 WATER QUALITY MONITORING LOCATIONS ASSOCIATED WITH REFERENCE SITE YR-RS AND TR-RS IN RELATION TO THE PROJECT

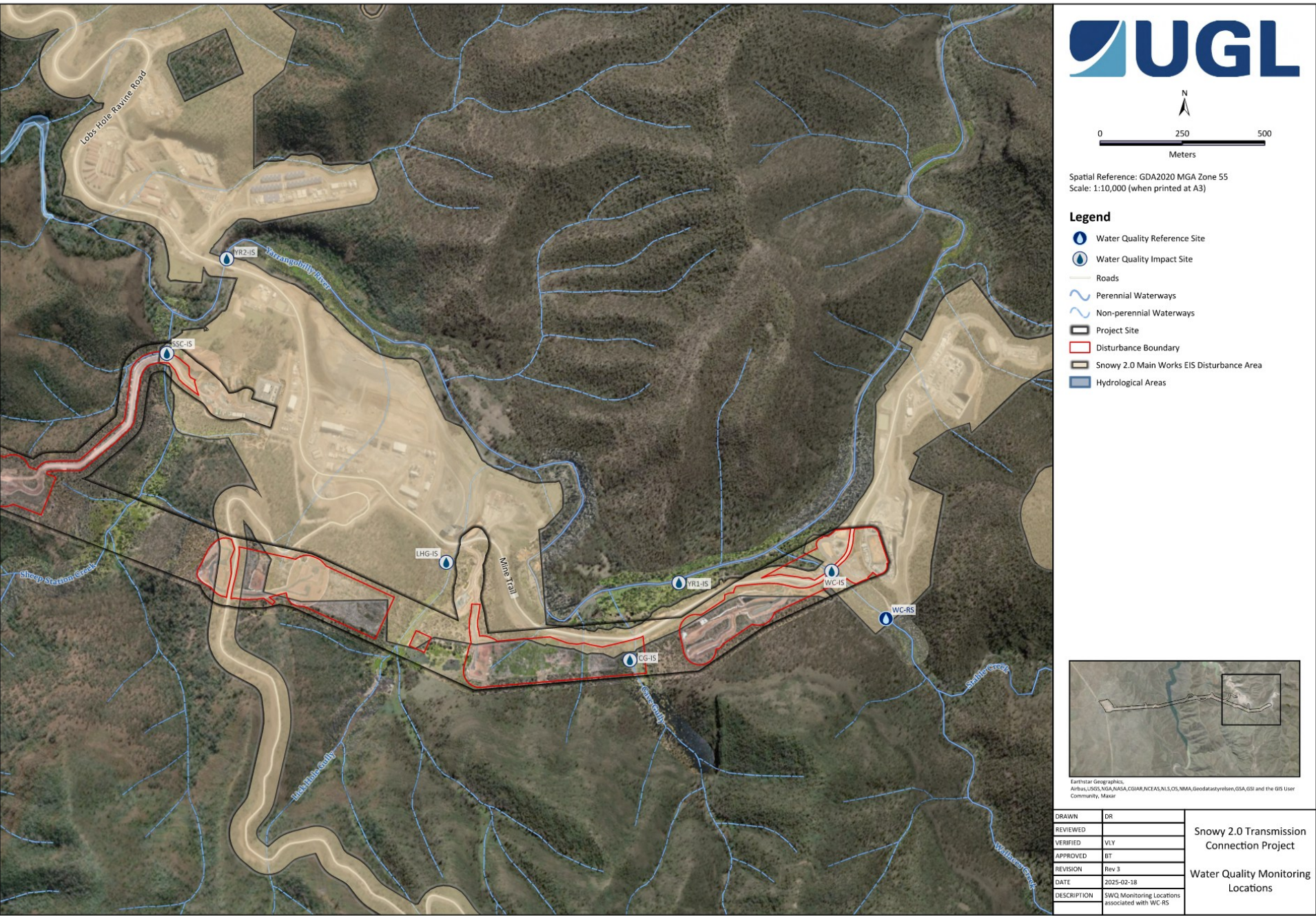


FIGURE 3 WATER QUALITY MONITORING LOCATIONS ASSOCIATED WITH REFERENCE SITE WC-RS IN RELATION TO THE PROJECT

Table 2 Seasonal SSGV (NGH, 2024) and DGV (ANZG, 2018) for water quality parameters

SURFACE WATER QUALITY GUIDELINE VALUES								
Parameter	Unit	WC-RS		TR-RS		YK-RS		DGV
		SSGV (Summer/Autumn)	SSGV (Winter/Spring)	SSGV (Summer/Autumn)	SSGV (Winter/Spring)	SSGV (Summer/Autumn)	SSGV (Winter/Spring)	
Temperature	°C*	-	-	-	-	-	-	-
Dissolved Oxygen (DO) ***	%#	96.2	89.7	91.3	95.5	89.6	88.7	90-110
DO	ppm <sup>+</sup>	9.08	10.28	8.79	11.53	8.35	10.2	-
Specific Electrical Conductivity (EC)***	SPC <sup>^</sup> μS/cm <sup>^^</sup>	115	88	24	38.7	31	27.9	30-350
EC***	μS/cm	93.2	60.85	20.3	26.2	24	20.5	30-350
pH***	-	7.85	7.62	7.59	7.59	6.79	6.61	6.5-8
Redox	mV <sup>##</sup>	79.1	98.4	91.2	95.4	94.6	106.1	-
Turbidity***	NTU <sup>**</sup>	0.37	5.12	0.09	1.56	9	7.87	2-25
Dissolved Aluminium (Al)	mg/L <sup>++</sup>	0.03	0.04	0.03	0.015	0.36	0.32	0.027
Dissolved Arsenic (As)	mg/L	0.003	0.0003	0.003	0.0003	0.003	0.0003	0.0008
Dissolved Cadmium (Cd)	mg/L	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.0006
Dissolved Chromium (Cr)	mg/L	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Dissolved Copper (Cu)	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001
Cyanide	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.004
Dissolved Iron (Fe)	mg/L	0.03	0.02	0.04	0.02	0.41	0.23	0.3
Dissolved Lead (Pb)	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Dissolved Manganese (Mn)	mg/L	0.002	0.002	0.003	0.002	0.005	0.003	1.2
Dissolved Mercury (Hg)	mg/L	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00006

## SURFACE WATER QUALITY GUIDELINE VALUES

Parameter	Unit	WC-RS		TR-RS		YK-RS		DGV
		SSGV (Summer/Autumn)	SSGV (Winter/Spring)	SSGV (Summer/Autumn)	SSGV (Winter/Spring)	SSGV (Summer/Autumn)	SSGV (Winter/Spring)	
Dissolved Nickel (Ni)	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.008
Total Nitrogen (TN)	mg/L	0.2	0.2	0.2	0.2	0.2	0.2	0.25
Total Phosphorus (TP)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Dissolved Silver (Ag)	mg/L	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
Dissolved Zinc (Zn)	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.0024
Ammonia	mg/L	0.013	0.013	0.013	0.013	0.013	0.013	0.013
Nitrogen Oxides	mg/L	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Reactive Phosphorus (RP)	mg/L	0.02	0.015	0.02	0.015	0.02	0.02	0.015
Total Hardness (CaCO <sub>3</sub> )	mg/L	47	30	7.5	8	1	7	-
Total Kjeldahl Nitrogen (TKN)	mg/L	0.2	0.2	0.1	0.2	0.1	0.2	-
Total Dissolved Solids (TDS)	mg/L	52	39	12.5	15	30	10	-
Total Suspended Solids (TSS)	mg/L	0.2	1	0.2	0.2	3	0.2	0.2
Total Al <sup>@</sup>	mg/L	-	-	-	-	-	-	0.027
Total As <sup>@</sup>	mg/L	-	-	-	-	-	-	0.0008
Total Cd <sup>@</sup>	mg/L	-	-	-	-	-	-	0.0006
Total Cr <sup>@</sup>	mg/L	-	-	-	-	-	-	0.00001
Total Cu <sup>@</sup>	mg/L	-	-	-	-	-	-	0.001
Total Pb <sup>@</sup>	mg/L	-	-	-	-	-	-	0.001
Total Mn <sup>@</sup>	mg/L	-	-	-	-	-	-	1.2
Total Ni <sup>@</sup>	mg/L	-	-	-	-	-	-	0.008

## SURFACE WATER QUALITY GUIDELINE VALUES

Parameter	Unit	WC-RS		TR-RS		YK-RS		DGV
		SSGV (Summer/Autumn)	SSGV (Winter/Spring)	SSGV (Summer/Autumn)	SSGV (Winter/Spring)	SSGV (Summer/Autumn)	SSGV (Winter/Spring)	
Total Ag <sup>@</sup>	mg/L	-	-	-	-	-	-	0.00002
Total Zn <sup>@</sup>	mg/L	-	-	-	-	-	-	0.0024
Total Fe <sup>@</sup>	mg/L	-	-	-	-	-	-	0.3
Total Hg <sup>@</sup>	mg/L	-	-	-	-	-	-	0.00006

\* °C = degrees Celsius

# % = percent

### mV = millivolt

+ ppm = parts per million

^ SPC = specific conductance

\*\* mg/L = milligram per litre

\*\* NTU = Nephelometric Turbidity Unit

^^ μS/cm = micro Siemens per centimetre

@ parameter not analysed by NGH

\*\*\* assessed against DGV where guideline range is more appropriate for the parameter

## 4 BASELINE WATER QUALITY

### 4.1 Water Quality Objectives

Water quality objectives are outlined in Section 2.1 of the Baseline Report (NGH, 2024).

### 4.2 Site Specific Guideline Values

In accordance with the ANZG (ANZG, 2018), SSGV for the three Reference Sites (RS) (WC-RS, TR-RS and YK-RS) were derived from the results collected during the 24-month pre-construction SWQ monitoring period. The SSGV reflect the seasonality observed in the baseline data and are characterised by the drier months of Summer/Autumn (December to May) and wetter months of Winter/Spring (June to November) in accordance with the 'Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) methodology and derivatives developed to 2018 of the ANZG (ANZG, 2018).

Table 2 outlines the seasonal SSGV provided in the Baseline Report (NGH, 2024).

## 5 NOVEMBER 2025 MONITORING

SW sampling was undertaken at 11 monitoring locations on the 23<sup>rd</sup> November 2025. Three sites (CG-IS, LHG-IS and SSC-IS) were dry or had no flow at the time of monitoring.

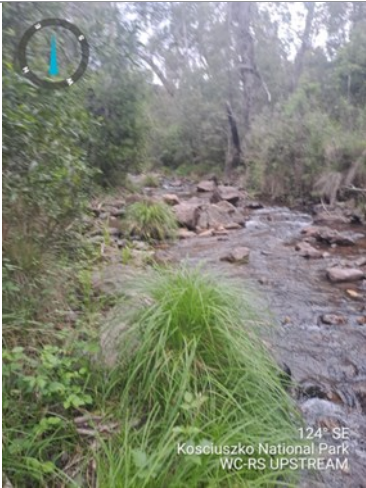
In accordance with the methodology outlined in Section 3, SW samples were either measured in situ using a calibrated YSI ProDSS Sonde Multiparameter Digital Water Quality Meter (refer to Appendix D) or analysed by National Association of Testing Authorities, Australia (NATA) accredited ALS Limited (ALS) laboratory.

The 'Water Quality Monitoring Field Data Sheet' (Field Sheet) (UGL, 2025) is provided in Appendix A. The 'Certificate of Analysis' (COA) (ALS, 2025a), 'QA/QC Compliance Assessment to assist with Quality Review' (QA/QC Assessment) (ALS, 2025b) and 'Quality Control Report' (QCR) (ALS, 2025c) are attached in Appendix B.

## 5.1 Observations

Field observations during sampling are summarised in Table 3.



**Table 3 Field observations during sampling**

FIELD OBSERVATIONS		
<b>Date</b>	23 <sup>rd</sup> November 2025	
<b>Weather</b>	The weather forecast for 23 November was 10.2 degrees Celsius (°C) with 90 percent of 1-5 millimetres (mm) of rain. The previous 48 hours was cloudy and experienced a total of 0.2mm of rainfall across 22 – 23 November. At the time of sampling, the weather was fine and sunny.	
<b>ID</b>	<b>Observations</b>	<b>Photo</b>
WC-RS	<ul style="list-style-type: none"> <li>• Low flow</li> <li>• Rocky and eroded banks including exposed roots from a large tree</li> <li>• Clear water</li> <li>• Overhanging vegetation</li> <li>• Riparian vegetation consisted of groundcover, shrubs and trees</li> </ul> <p>Moderate weed density including of Blackberry (<i>Rubus fruticosus</i>)</p>	



## FIELD OBSERVATIONS

ID	Observations	Photo
WC-IS	<ul style="list-style-type: none"> <li>• Low flow</li> <li>• Presence of vegetative detritus</li> <li>• Riparian vegetation predominantly trees and grass</li> <li>• High weed density including Blackberry (<i>Rubus fruticosus</i>)</li> <li>• Rocky banks and undercut banks</li> <li>• Monitoring location is adjacent to bridge and Mine Trail Road which is frequently used by Snowy 2.0 vehicles, plant and machinery</li> </ul>	
CG-IS	<ul style="list-style-type: none"> <li>• No flow, dry</li> </ul>	



## FIELD OBSERVATIONS

ID	Observations	Photo
YR1-IS	<ul style="list-style-type: none"> <li>• Moderate flow</li> <li>• Clear water</li> <li>• Rocky bed and banks</li> <li>• Overhanging vegetation</li> <li>• Riparian vegetation predominantly groundcover</li> <li>• Moderate weed density including Blackberry (<i>Rubus fruticosus</i>)</li> <li>• Monitoring location is adjacent to bridge and electrical transmission tower on top of rocky cliff and Snowy 2.0 laydown area</li> </ul>	
LHG-IS	<ul style="list-style-type: none"> <li>• No flow, dry</li> </ul>	



## FIELD OBSERVATIONS

ID	Observations	Photo
YR2-IS	<ul style="list-style-type: none"> <li>• Low flow</li> <li>• Clear water</li> <li>• Moderate weed density including Thistle and Blackberry (<i>Rubus fruticosus</i>)</li> <li>• Riparian vegetation consisted of groundcover, shrubs and trees</li> <li>• Rocky banks with sections of exposed soil higher up the bank</li> <li>• Presence of aquatic vegetation</li> </ul>	
SSC-IS	<ul style="list-style-type: none"> <li>• No flow, dry</li> </ul>	


## FIELD OBSERVATIONS

ID	Observations	Photo
TR-RS	<ul style="list-style-type: none"> <li>• Rocky banks and sandy bed</li> <li>• Monitoring location is adjacent to publicly accessible O'Hares Campground and Talbingo Reservoir ancillary infrastructure</li> <li>• Presence of aquatic vegetation and vertebrates</li> <li>• Clear water</li> <li>• High low water volume</li> <li>• Riparian vegetation consisted of groundcover and trees</li> <li>• Presence of organic detritus</li> <li>• Low weed density</li> </ul>	
YK-RS	<ul style="list-style-type: none"> <li>• Low flow</li> <li>• Low weed density including Blackberry (<i>Rubus fruticosus</i>)</li> <li>• Undercut bed with eroded banks and sandy bed</li> <li>• Riparian vegetation consisted of groundcover, overhanging vegetation and trees</li> <li>• Slightly murky water</li> <li>• Monitoring location is adjacent to publicly accessible four-wheel drive (4WD) track</li> <li>• Presence of horse scats</li> <li>• Vegetative detritus in water</li> <li>• Presence of vegetative detritus</li> </ul>	

## FIELD OBSERVATIONS

ID	Observations	Photo
YK-IS (D/S)	<ul style="list-style-type: none"> <li>• Low flow</li> <li>• Presence of aquatic vegetation including algae</li> <li>• Clear water</li> <li>• Vegetative detritus in water</li> <li>• Riparian vegetation consisted of groundcover, overhanging vegetation and trees</li> <li>• Low weed density including Blackberry (<i>Rubus fruticosus</i>)</li> <li>• Undermined banks and eroded banks</li> <li>• Monitoring location is adjacent to Elliot Way</li> </ul>	
NZG-IS	<ul style="list-style-type: none"> <li>• Low flow</li> <li>• Presence of aquatic vegetation</li> <li>• Presence of organic detritus</li> <li>• Overhanging vegetation</li> <li>• Clear water</li> <li>• Moderate weed density including Blackberry (<i>Rubus fruticosus</i>)</li> <li>• Monitoring location is adjacent to publicly accessible 4WD track</li> <li>• Eroded and undermined banks and pebbly bed</li> <li>• Riparian vegetation consisted of groundcover and trees</li> </ul>	

## FIELD OBSERVATIONS

ID	Observations	Photo
YK-IS	<ul style="list-style-type: none"> <li>• Low flow</li> <li>• Clear water with slight milky tinge</li> <li>• Evidence of sediment deposition upstream of the creek</li> <li>• Eroded banks</li> <li>• Overhanging vegetation</li> <li>• Presence of vegetative detritus</li> <li>• HML activity</li> <li>• Riparian vegetation consisted of groundcover, shrubs and trees</li> <li>• Monitoring location is adjacent to Elliott Way, leading towards culvert</li> </ul>	

## 5.2 Results

The results from the construction SWQ monitoring program have been reported for each respective catchment: Yarrangobilly River, Talbingo Reservoir, and Yorkers Creek.

- **Yarrangobilly River catchment** monitoring includes the reference site at Wallace Creek and impact sites at Yarrangobilly River, Wallace Creek, Cave Gully, Lick Hole Gully, and Sheep Station Creek.
- **Yorkers Creek catchment** monitoring includes the reference site at Yorkers Creek and impact sites at Yorkers Creek and New Zealand Gully.
- **Talbingo Reservoir** features a reference site located upstream within the reservoir, serving as an overall reference for monitoring sites in the Yarrangobilly River and Yorkers Creek catchments.

This reference site provides a baseline for the SWQ monitoring program.

The SWQ monitoring results for key physical and chemical parameters, along with site-specific trigger values, are detailed in Section 5.2.1. Results for dissolved and total metals, including site-specific trigger values, are covered in Sections 5.2.2 and 5.2.3. Upon review of the data, observations were noted between the reference and impact sites.

The complete table of results is attached in Appendix C.

### 5.2.1 Key Physical and Chemical Parameters

See below for results of key physical and chemical parameters.

### 5.2.1.1 Temperature

During November 2025, all three sampling locations exhibited an increase in temperature (°C) compared to October 2025. At both the Yarrangobilly River Catchment (Figure 4) and Talbingo Reservoir (Figure 5), the mean temperature increased by  $\approx 3^{\circ}\text{C}$  to  $\approx 16^{\circ}\text{C}$  and  $\approx 19^{\circ}\text{C}$  respectively. The largest temperature increase was evidenced at Yorkers Creek Catchment (Figure 6), where the mean temperature increased by  $\approx 7^{\circ}\text{C}$  to  $\approx 17^{\circ}\text{C}$ .

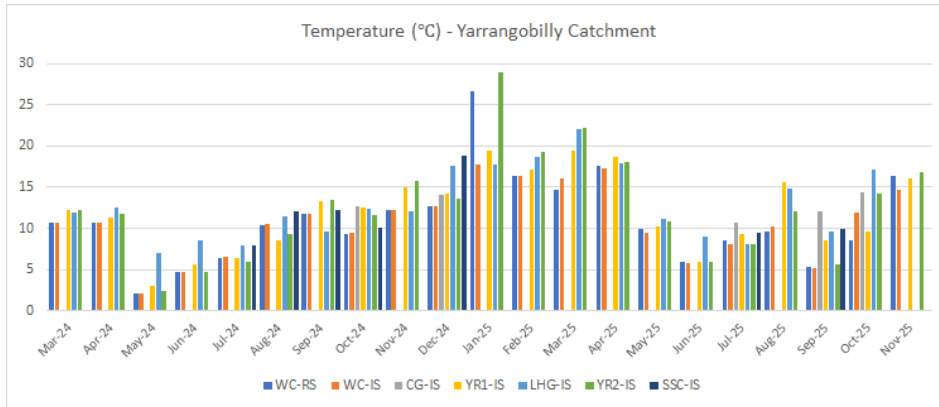


FIGURE 4 : TEMPERATURE FOR YARRANGOBILLY RIVER CATCHMENT

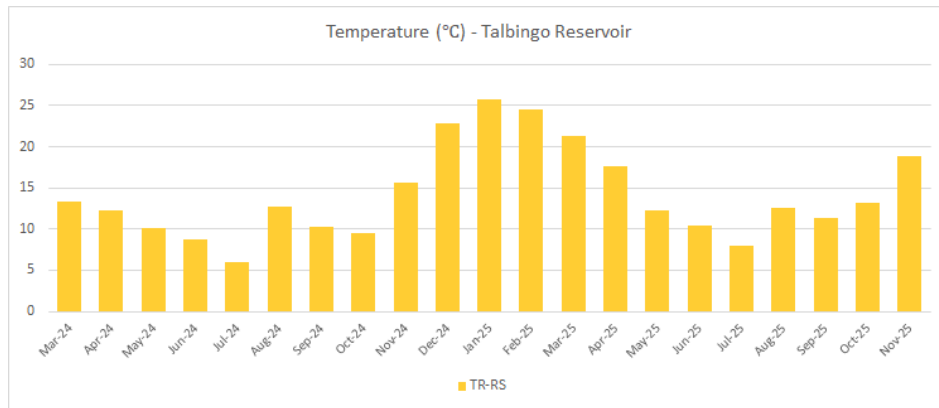


FIGURE 5: TEMPERATURE FOR TALBINGO RESERVOIR

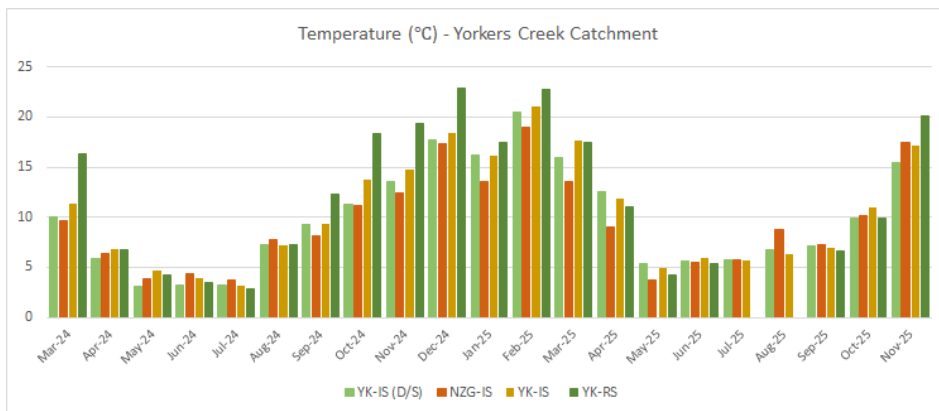


FIGURE 6: TEMPERATURE FOR YORKERS CREEK CATCHMENT

### 5.2.1.2 pH

During the November 2025 sampling period, Yarrangobilly River Catchment pH results increased from October values and marginally exceeded the June—November SSGV value (Figure 7). Talbingo Reservoir exhibited a decrease in pH values to ≈6.91pH (Figure 8) and continued to trend below the SSGV for the fourth consecutive month. Yorkers Creek Catchment pH values were above the June – November SSGV at all sites except YK-IS, which recorded ≈6.18pH in November 2025 (Figure 9).

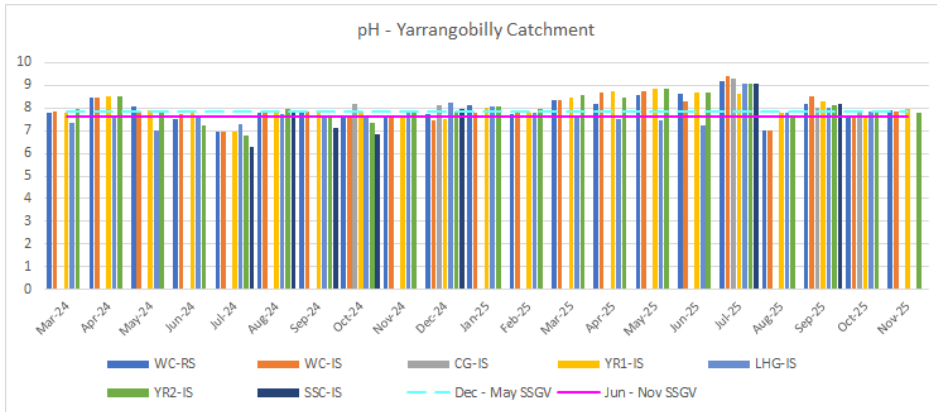


FIGURE 7: PH FOR YARRANGOBILLY RIVER CATCHMENT

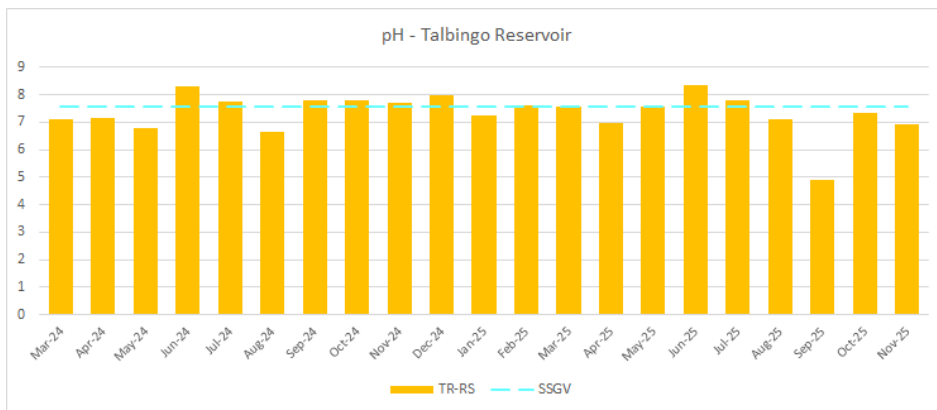


FIGURE 8: PH FOR TALBINGO RESERVOIR

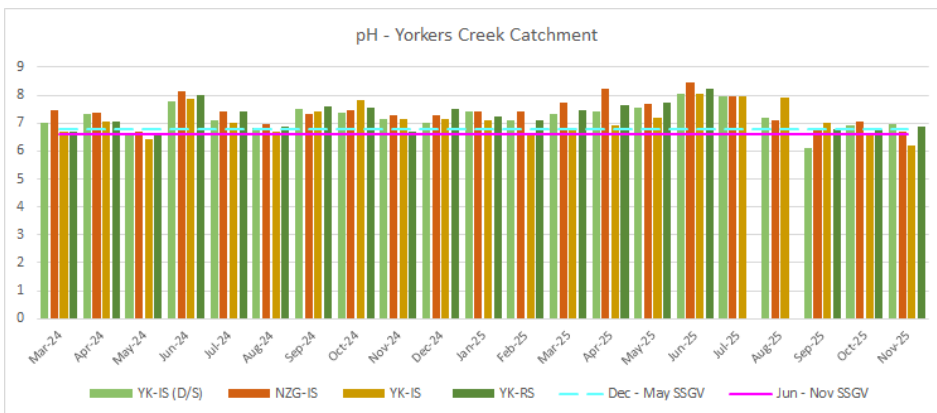


FIGURE 9: PH FOR YORKERS CREEK CATCHMENT

### 5.2.1.3 Dissolved Oxygen

During the November 2025 sampling period, Yarrangobilly River Catchment DO (%) was below October 2025 results and below the June–November SSGV at all sites (Figure 10). DO (%) at Talbingo Reservoir improved markedly in November 2025 to 80.7%, albeit trending below the June–November SSGV (Figure 11). Yorkers Creek Catchment presented similar results to Talbingo Reservoir, with marked improvements in DO (%) levels across all sites (Figure 12).

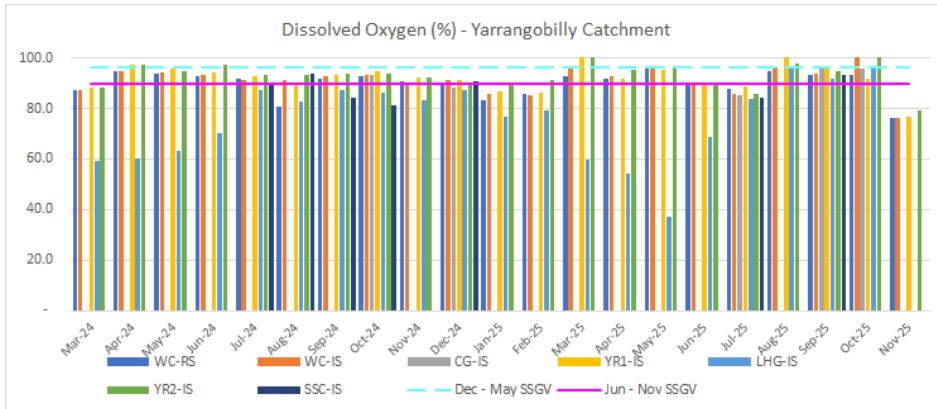


FIGURE 10: DO FOR YARRANGOBILLY RIVER CATCHMENT

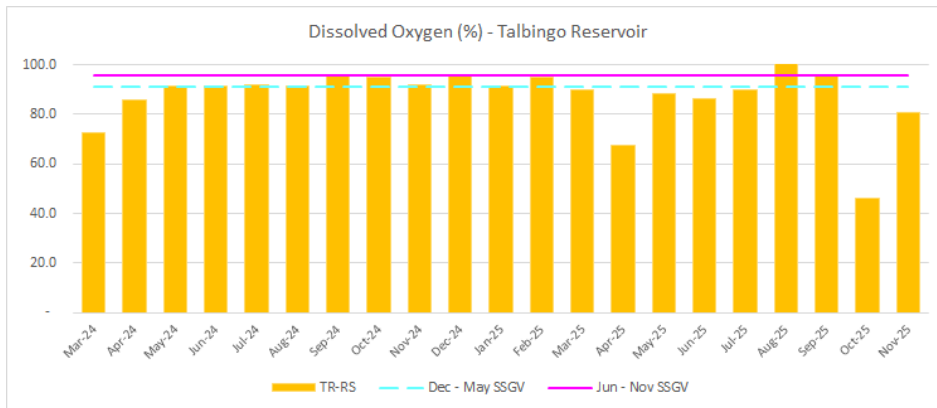


FIGURE 11: DO FOR TALBINGO RESERVOIR

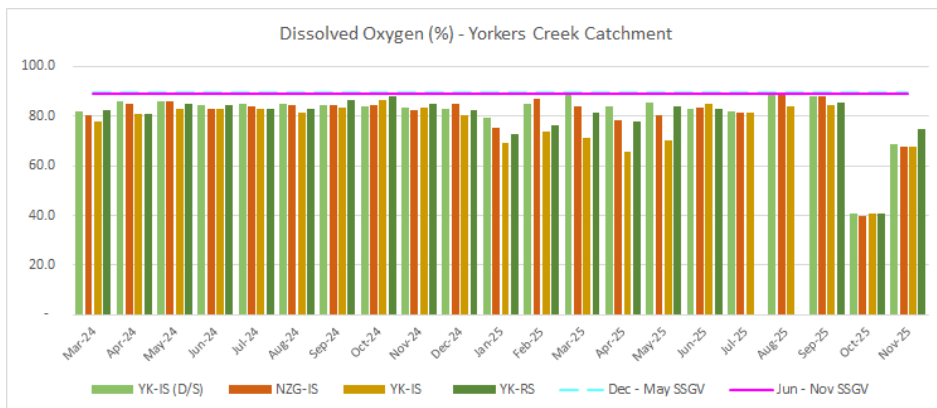


FIGURE 12: DO FOR YORKERS CREEK CATCHMENT

### 5.2.1.4 Specific Conductance

November 2025 specific conductance ( $\mu\text{S}/\text{cm}$ ) values exceeded the June – November SSGV at all sites within the Yarrangobilly River Catchment (Figure 13). Talbingo Reservoir (TR-RS) specific conductance ( $\mu\text{S}/\text{cm}$ ) value marginally exceeded the June – November SSGV (Figure 14). An exceedance was recorded in Yorkers Creek Catchment at YK-RS and NZG-IS (Figure 15).

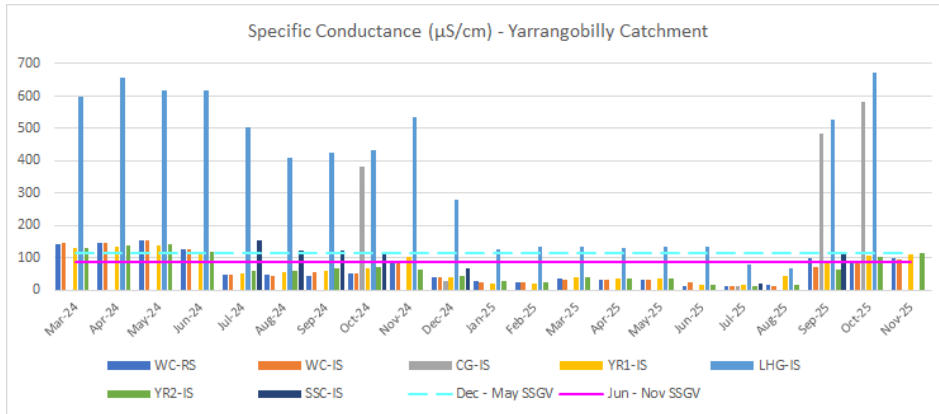


FIGURE 13: SPC FOR YARRANGOBILLY RIVER CATCHMENT

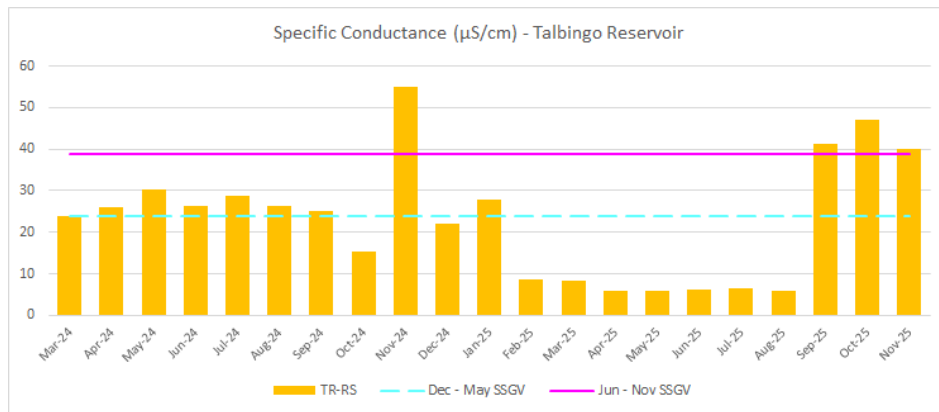


Figure 14: SPC for Talbingo Reservoir

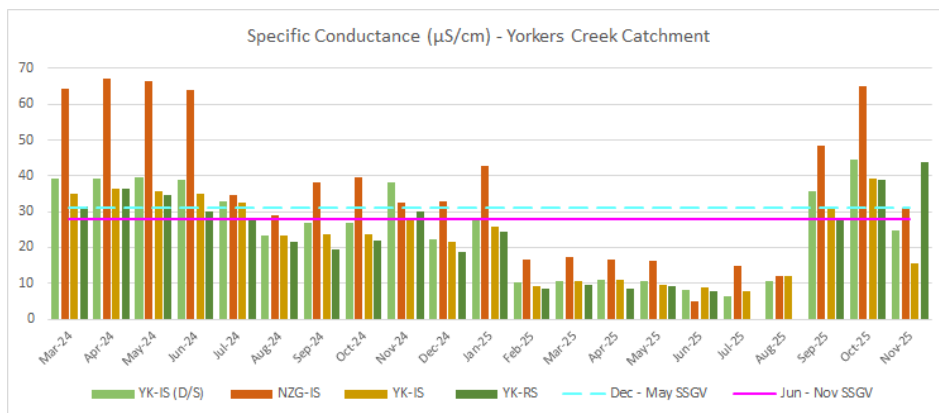


FIGURE 15: SPC FOR YORKERS CREEK CATCHMENT

### 5.2.1.5 Electrical Conductivity

In November 2025, Electrical Conductivity (EC,  $\mu\text{S}/\text{cm}$ ) exceeded June-November SSGV across all three catchments (Yarrangobilly River Catchment in Figure 16, Talbingo Reservoir in Figure 17, Yorkers Creek Catchment in Figure 18), except WC-RS and YK-IS(D/S) which were below October 2025 results and below the June-November SSGV.

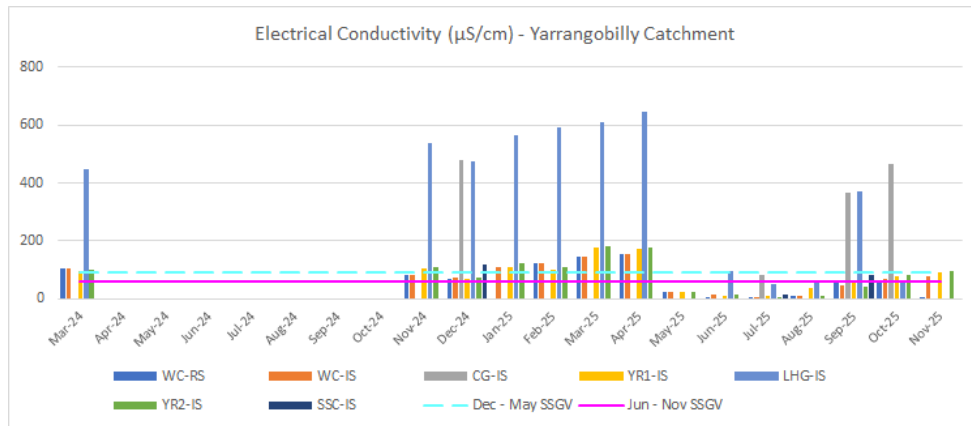


FIGURE 16: EC FOR YARRANGOBILLY RIVER CATCHMENT

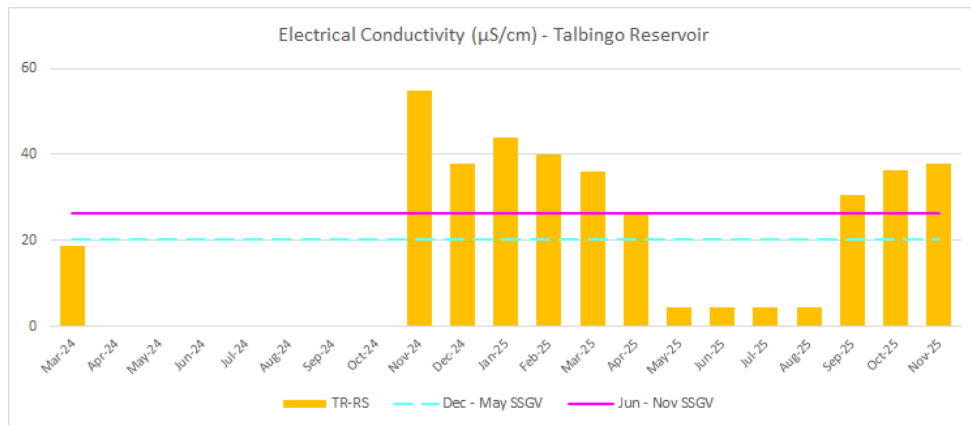


FIGURE 17: EC FOR TALBINGO RESERVOIR

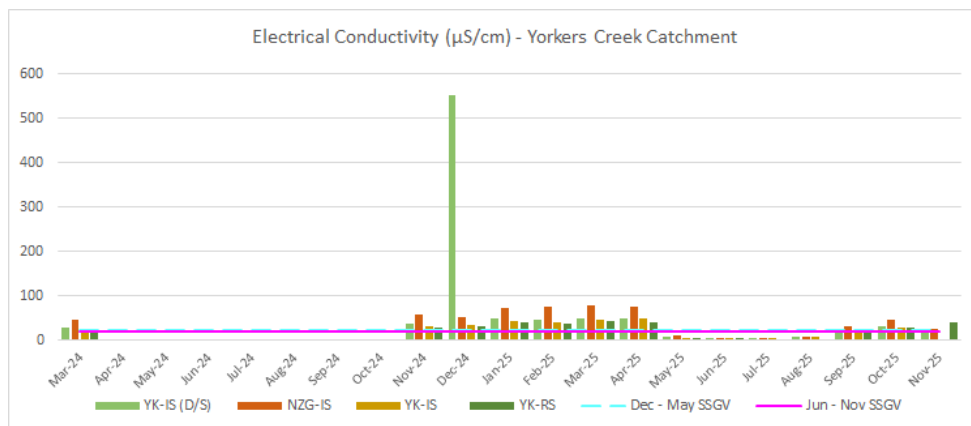


FIGURE 18: EC FOR YORKERS CREEK CATCHMENT

### 5.2.1.6 Turbidity

In November 2025, Turbidity (NTU) results were generally below the June—November SSGV (Figure 19—21) with only one exceedance recorded from YK-RS (14.8NTU) in the Yorkers Creek Catchment (Figure 21).

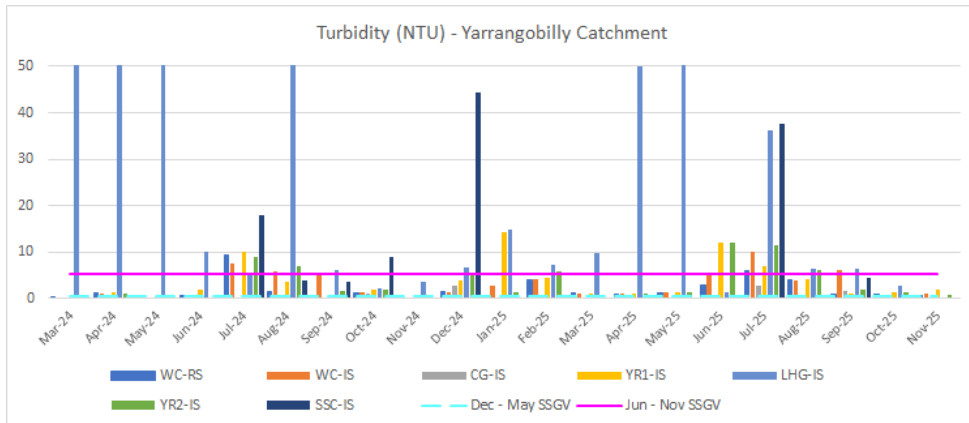


FIGURE 19: TURBIDITY FOR YARRANGOBILLY RIVER CATCHMENT

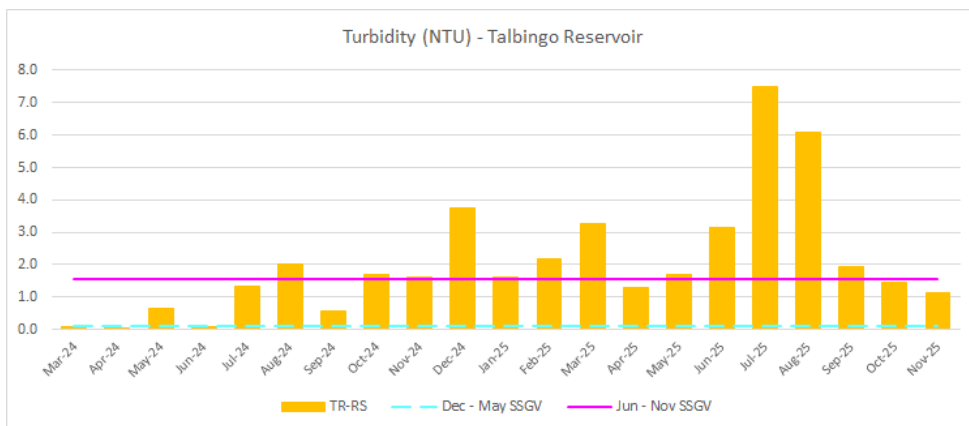


FIGURE 20: TURBIDITY FOR TALBINGO RESERVOIR

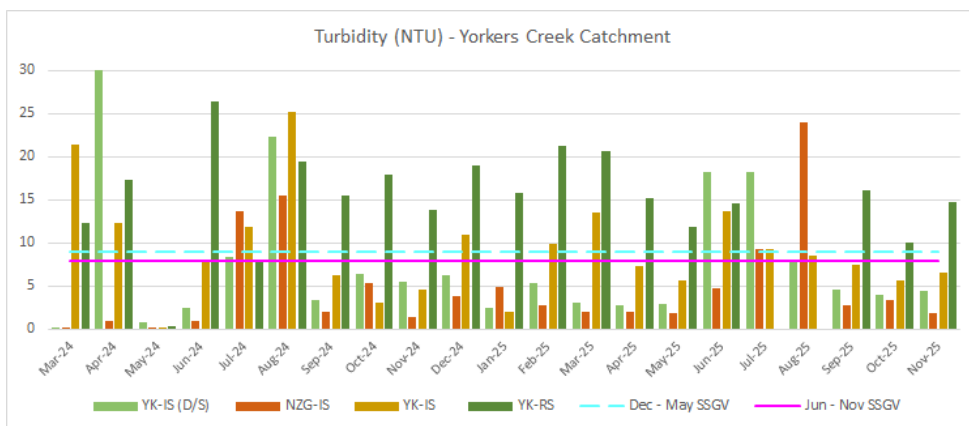


FIGURE 21: TURBIDITY FOR YORKERS CREEK CATCHMENT

### 5.2.1.7 Total Suspended Solids

In November 2025, Total Suspended Solids (TSS, mg/L) maintained similar results compared to October 2025 (Figure 22—24). A moderate increase in TSS (mg/L) was recorded at YK-RS in the Yorkers Creek Catchment (Figure 24).

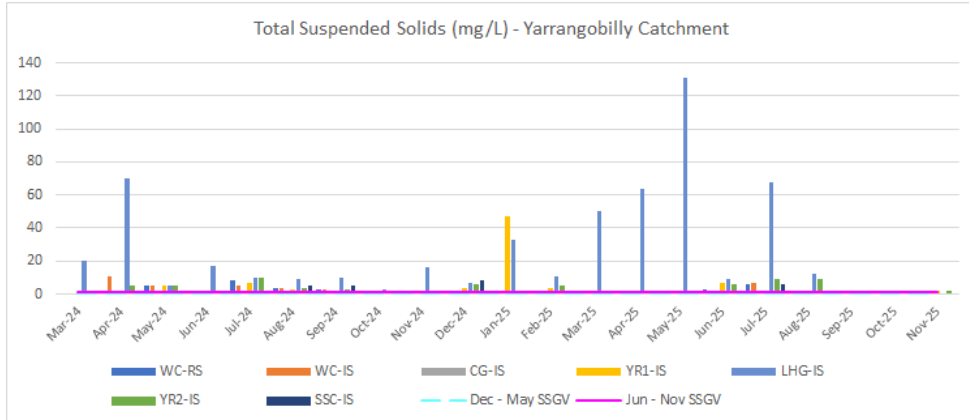


FIGURE 22: TSS FOR YARRANGOBILLY RIVER CATCHMENT

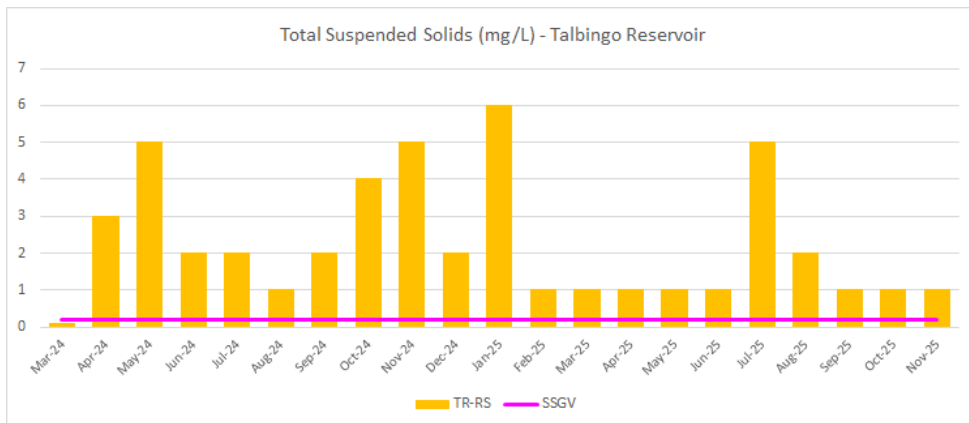


FIGURE 23: TSS FOR TALBINGO RESERVOIR

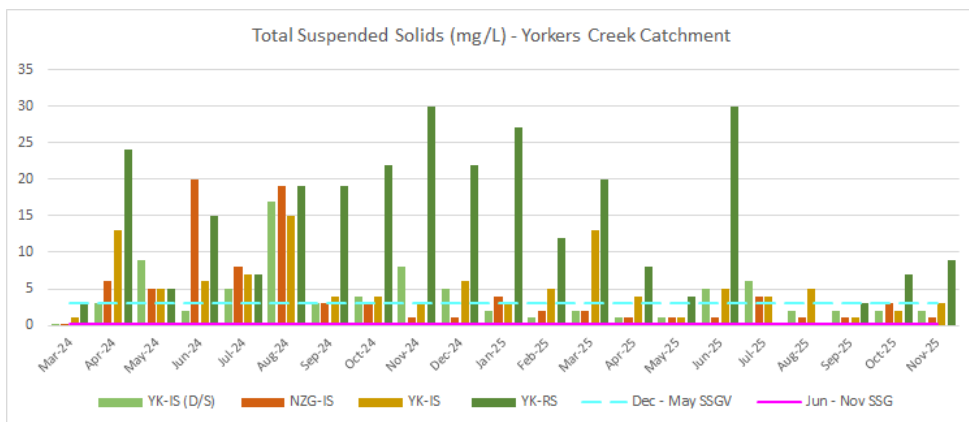


FIGURE 24: TSS FOR YORKERS CREEK CATCHMENT

### 5.2.1.8 Total Dissolved Solids

In the November 2025 sampling period, Total Dissolved Solids (mg/L) values exceeded the June-November SSGV at all sites across all catchments (Figure 25 – 27).

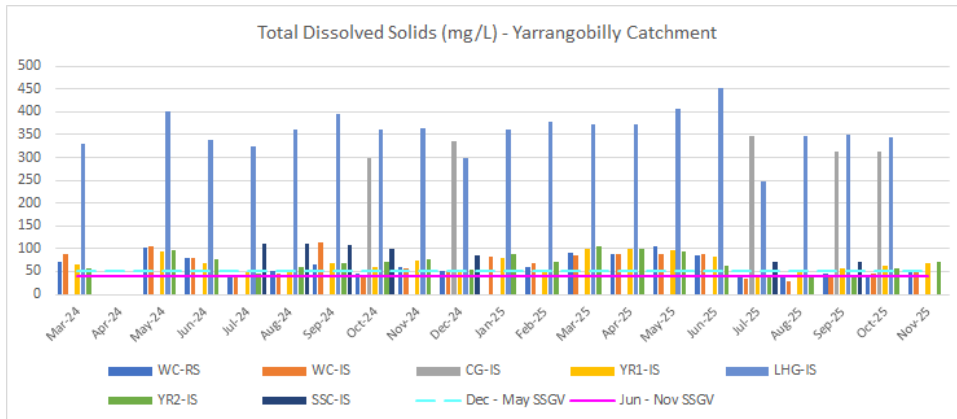


FIGURE 25: TDS FOR YARRANGOBILLY RIVER CATCHMENT

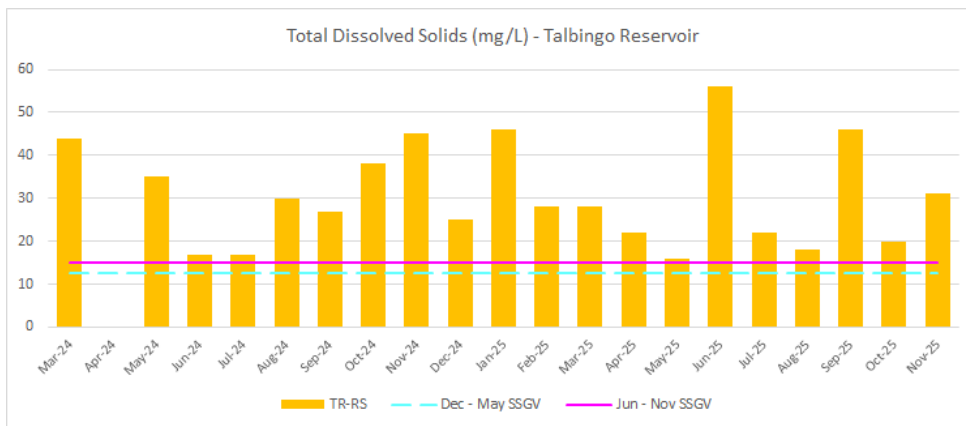


FIGURE 26: TDS FOR TALBINGO RESERVOIR

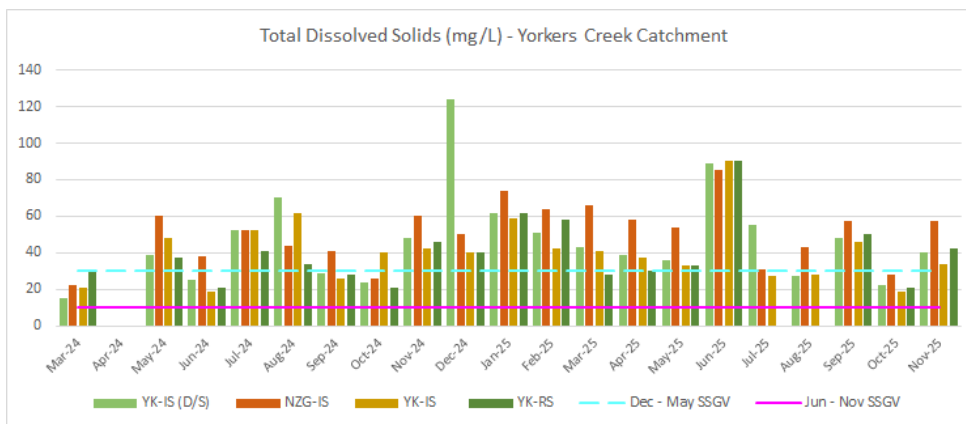


FIGURE 27: TDS FOR YORKERS CREEK CATCHMENT

### 5.2.1.9 Redox

All Redox (mV) results for November 2025 exhibited an increase compared with October 2025 across all catchments (Yarrangobilly River Catchment, Talbingo Reservoir, Yorkers Creek Catchment). All sites exceeded the June-November SSGV (Figure 28-Figure30).

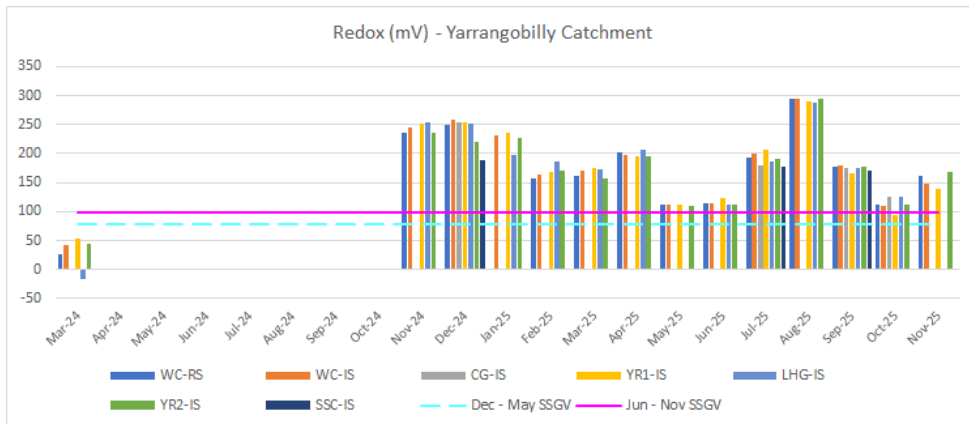


FIGURE 28: REDOX FOR YARRANGOBILLY RIVER CATCHMENT

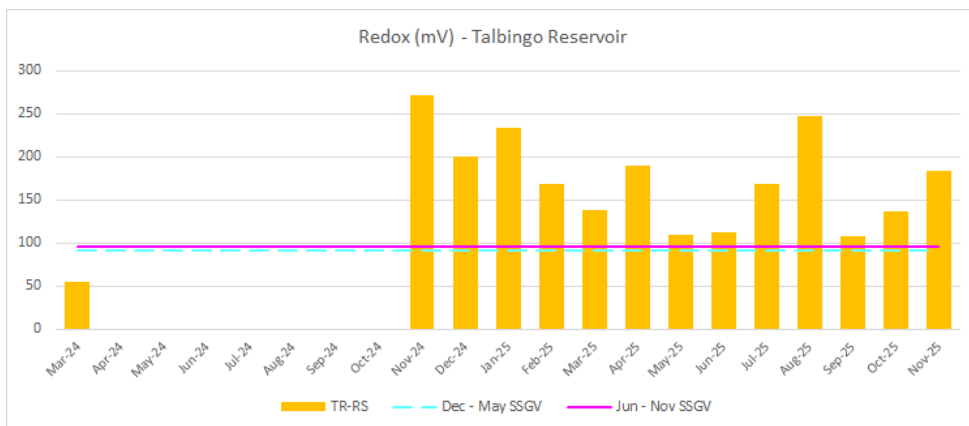


FIGURE 29: REDOX FOR TALBINGO RESERVOIR

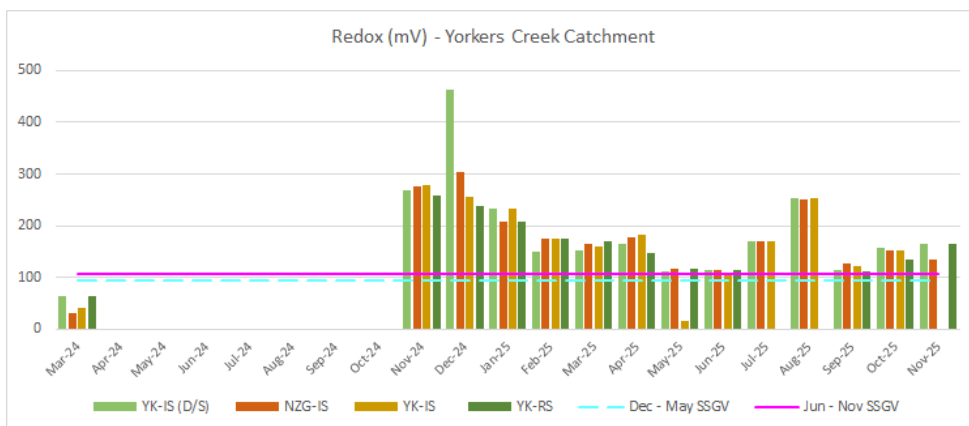


FIGURE 30: REDOX FOR YORKERS CREEK CATCHMENT

### 5.2.1.10 Nitrogen Oxides

During the November 2025 sampling period, Nitrogen Oxides (mg/L) levels remained below the LOR across all sites in all catchments, except for YR1-IS and YK-IS(D/S), which were above the SSGV (Figure 31 – 33).

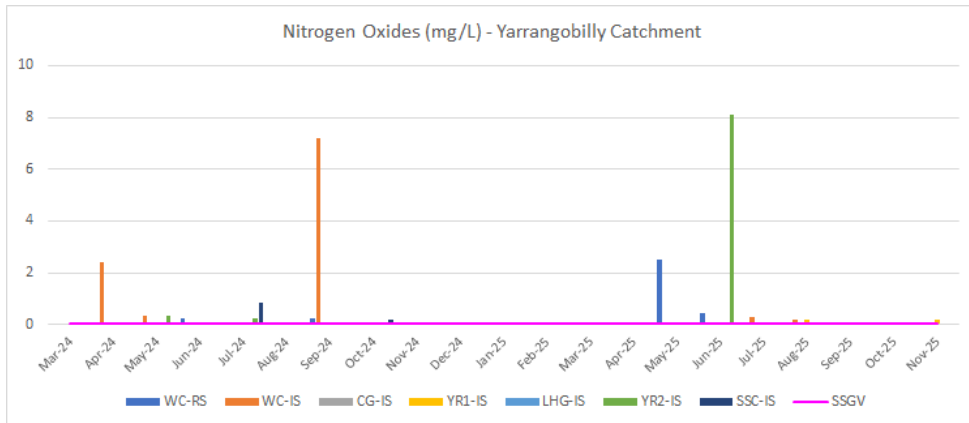


FIGURE 31: NITROGEN OXIDES FOR YARRANGOBILLY RIVER CATCHMENT

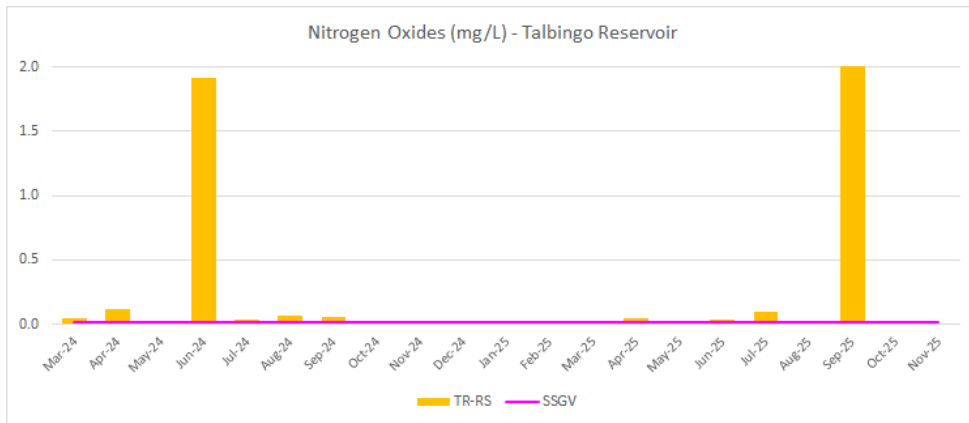


FIGURE 32: NITROGEN OXIDES FOR TALBINGO RESERVOIR

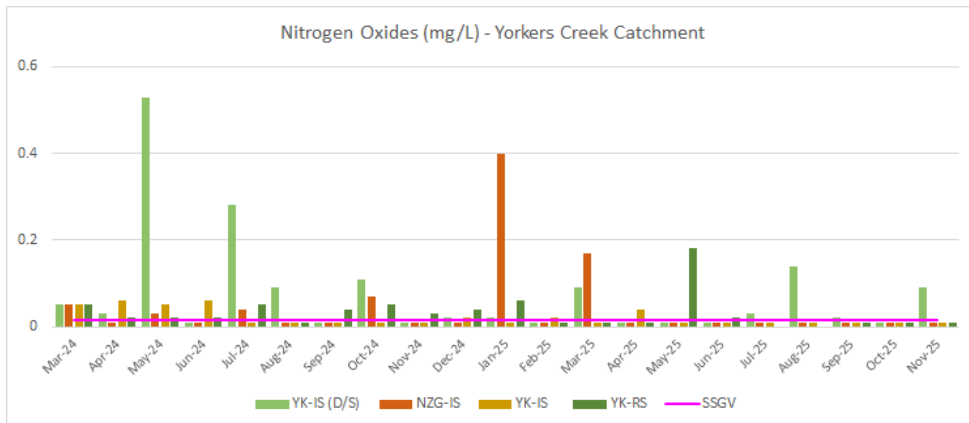


FIGURE 33: NITROGEN OXIDES FOR YORKERS CREEK CATCHMENT

### 5.2.1.11 Ammonia

Ammonia (mg/L) concentrations during the November 2025 sampling period were below the LOR across all sites in all catchments (Figure 34—36), except WC-IS in Yarrangobilly River Catchment, which was above the SSGV (Figure 34).

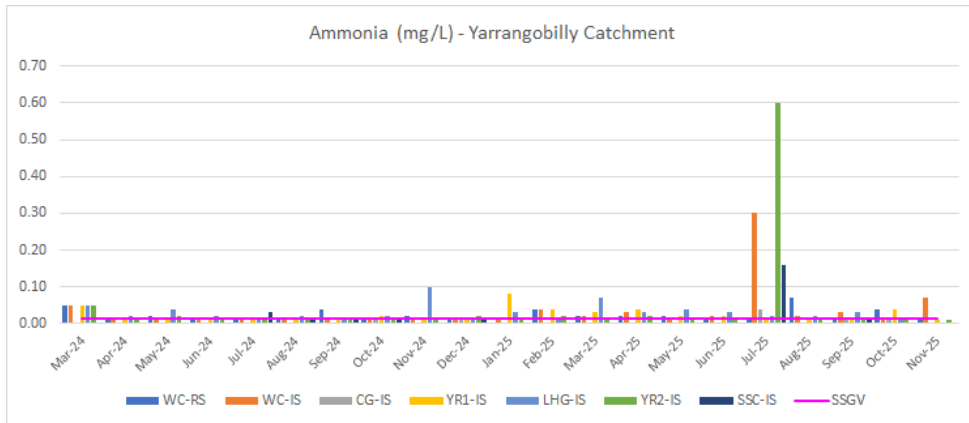


FIGURE 34: AMMONIA FOR YARRANGOBILLY RIVER CATCHMENT

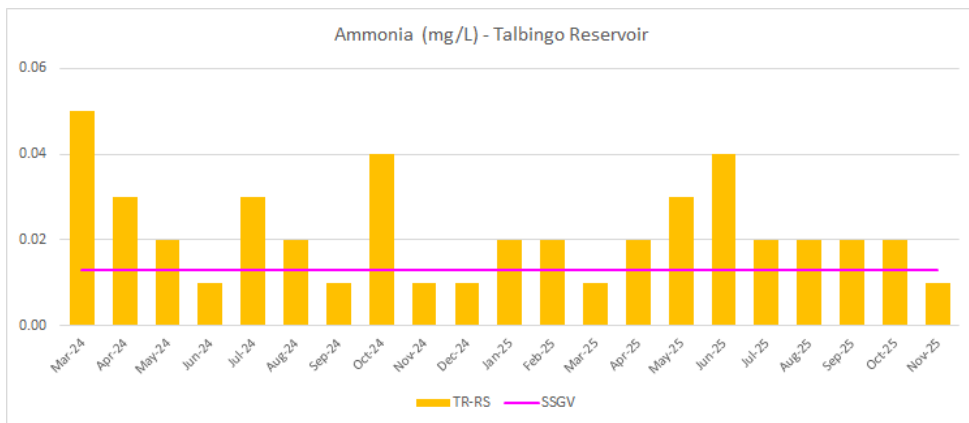


FIGURE 35: AMMONIA FOR TALBINGO RESERVOIR

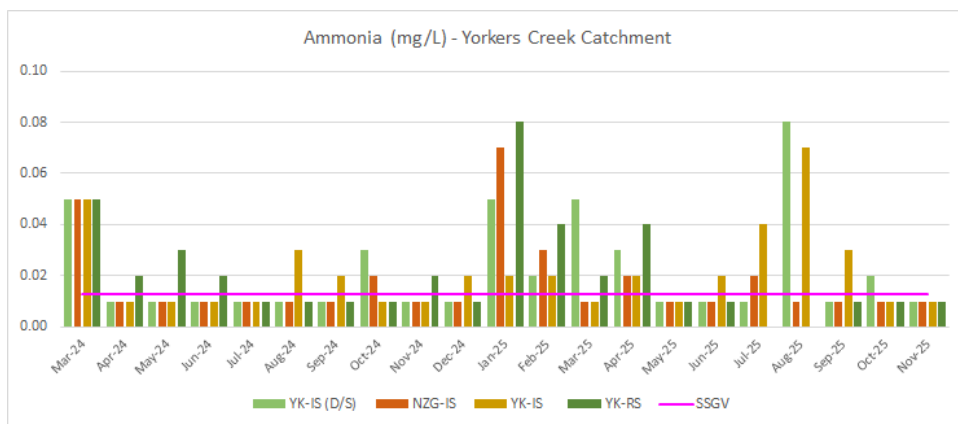


FIGURE 36: AMMONIA FOR YORKERS CREEK CATCHMENT

### 5.2.1.12 Cyanide

Cyanide (mg/L) concentration was below the LOR at all sites across all three catchments (Figure 37 to Figure 38).

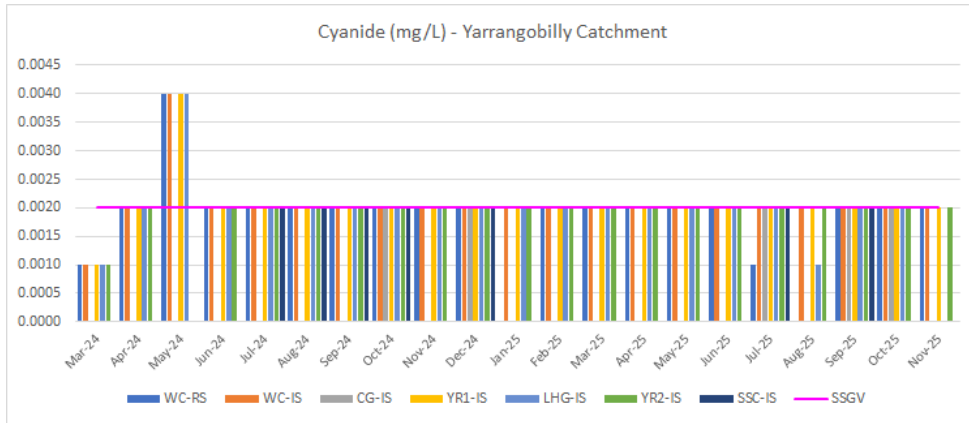


FIGURE 37: CYANIDE FOR YARRANGOBILLY RIVER CATCHMENT

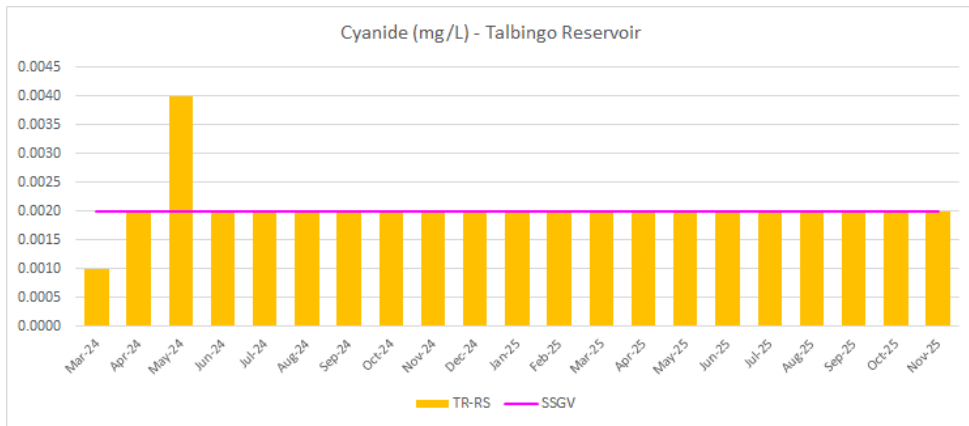


FIGURE 38: CYANIDE FOR TALBINGO RESERVOIR

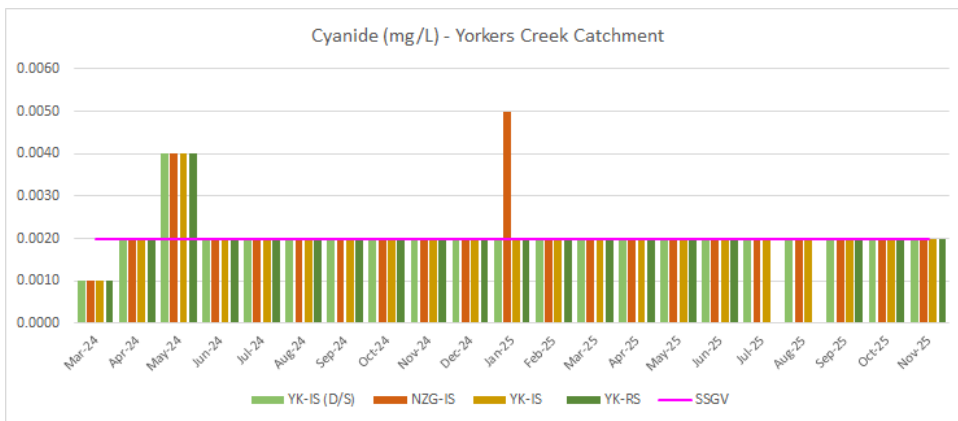


FIGURE 38: CYANIDE FOR YORKERS CREEK CATCHMENT

### 5.2.1.13 Total Hardness

November 2025 sampling of Total Hardness (mg/L) did not record values at CG-IS and LHG-IS in the Yarrangobilly Catchment, which historically have been higher than other sites. All sites exceeded the June-November SSGV (Figure 40—42).

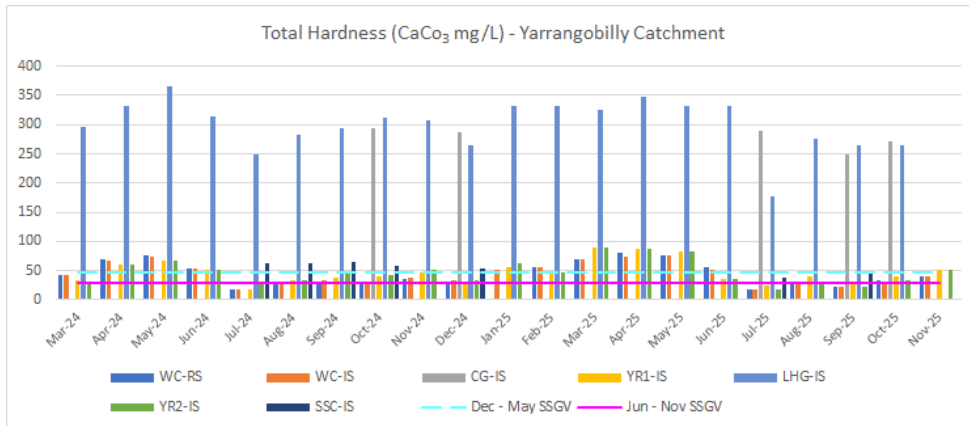


FIGURE 39: CaCO<sub>3</sub> FOR YARRANGOBILLY RIVER CATCHMENT

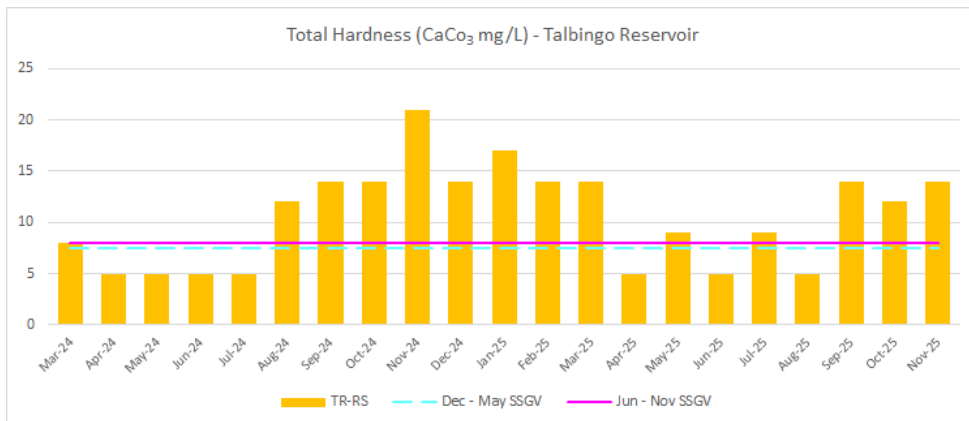


FIGURE 40: CaCO<sub>3</sub> FOR TALBINGO RESERVOIR

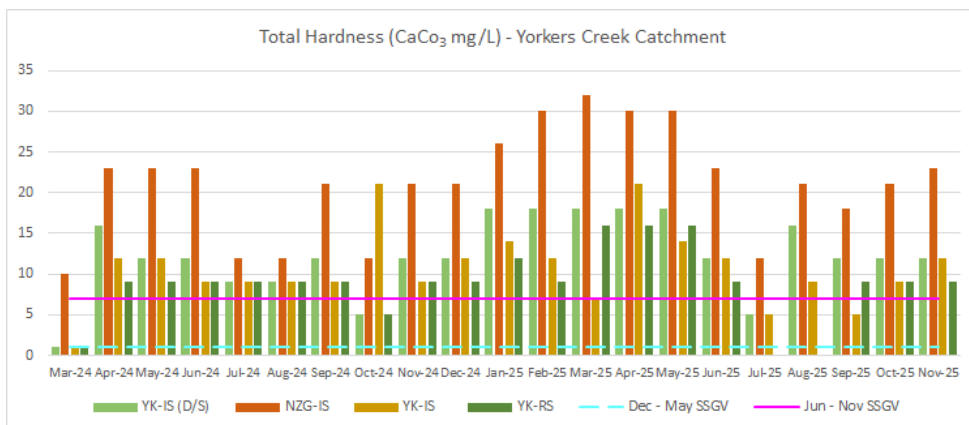


FIGURE 41: CaCO<sub>3</sub> FOR YORKERS CREEK CATCHMENT

### 5.2.1.14 Total Kjeldahl Nitrogen

During the November 2025 sampling period, several sites exhibited results that were either below the LOR or on-par with the SSGV (Figure 43-Figure 45). Two sites within Yorkers Creek Catchment (YK-RS, YK-IS(D/S)) exceeded the SSGV (Figure 45).

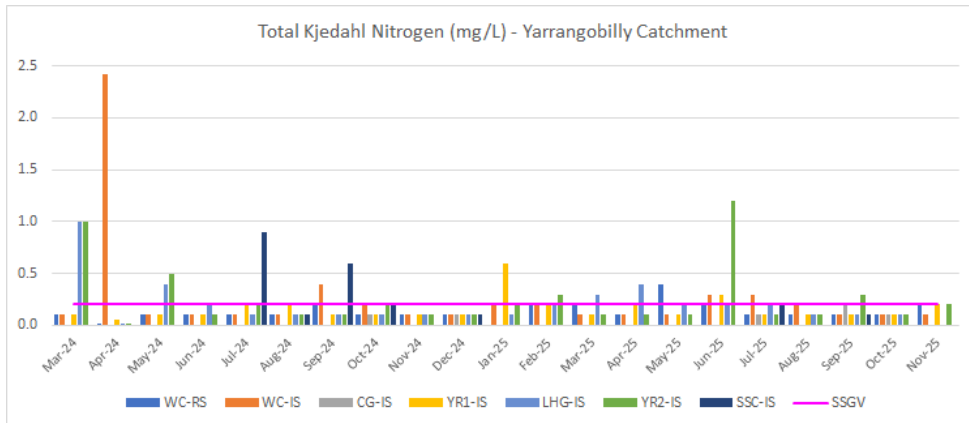


FIGURE 42: TKN FOR YARRANGOBILLY RIVER CATCHMENT

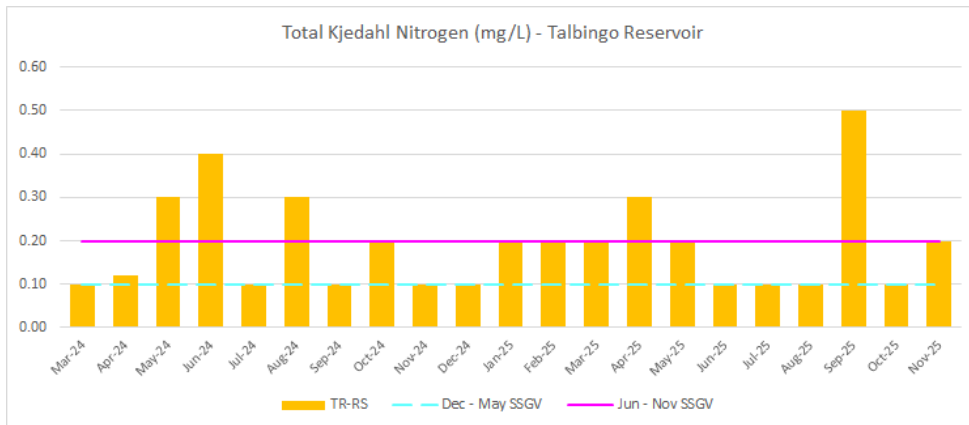


FIGURE 43: TKN FOR TALBINGO RESERVOIR

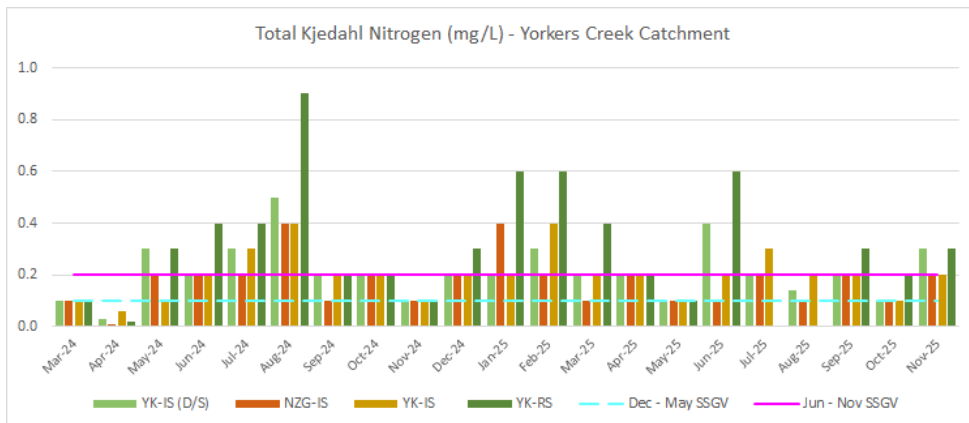


FIGURE 44: TKN FOR YORKERS CREEK CATCHMENT

### 5.2.1.15 Total Nitrogen

TN (mg/L) results during the November 2025 sampling period were either below the LOR of on-par with the SSGV across all sites and all catchments (Figure 46 – Figure 48), except for YK-RS and YK-IS(D/S) which recorded values above the SSGV (Figure 48).

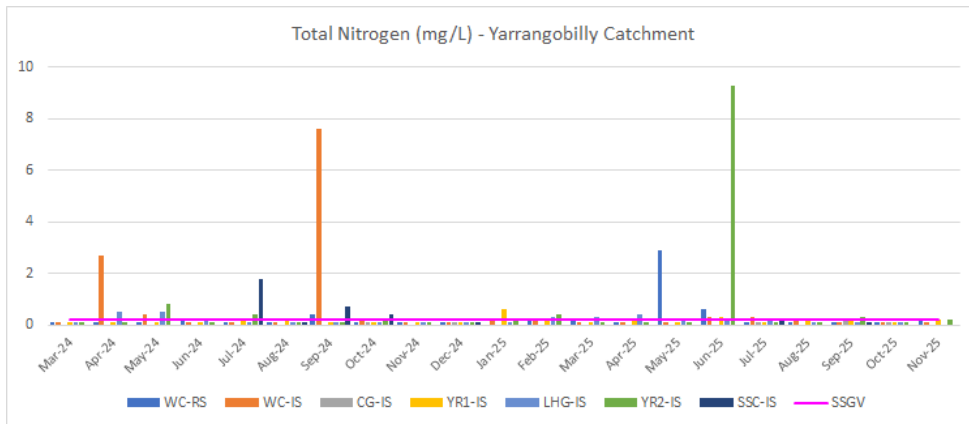


FIGURE 45: TN FOR YARRANGOBILLY RIVER CATCHMENT

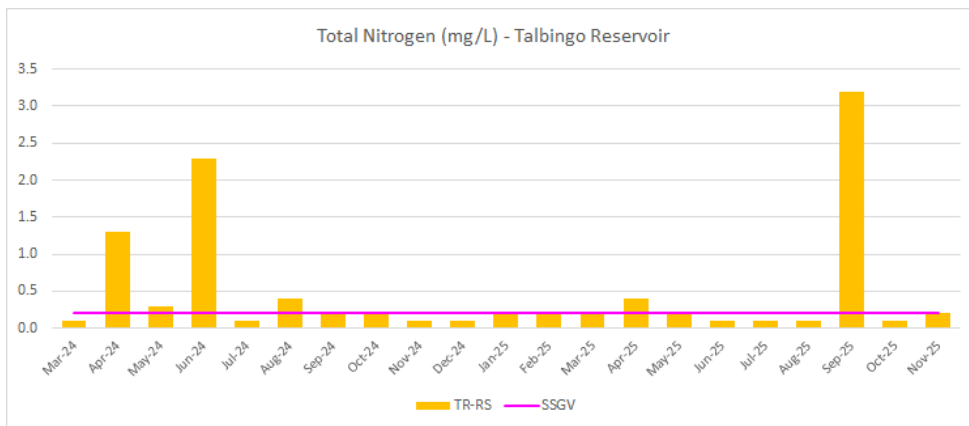


FIGURE 46: TN FOR TALBINGO RESERVOIR

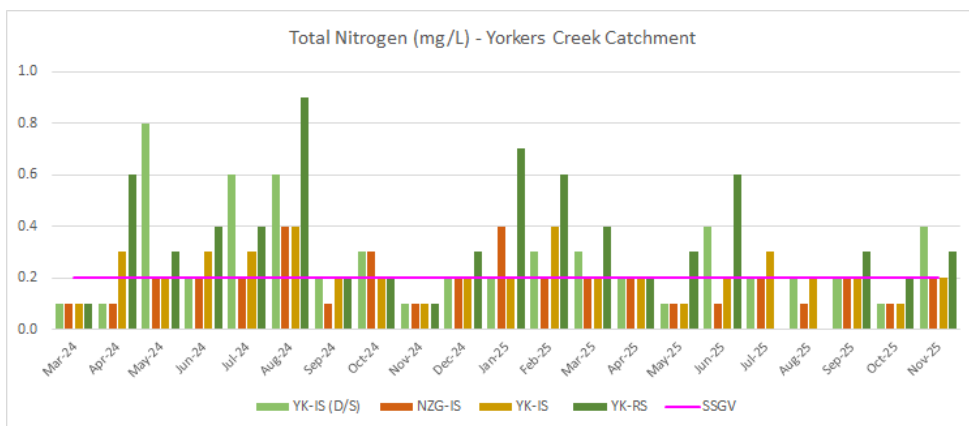


FIGURE 47: TN FOR YORKERS CREEK CATCHMENT

### 5.2.1.16 Total Phosphorus

Total Phosphorus (mg/L) values were below the LOR at all sites within all catchments (Figure 49-Figure 51), except for two reference sites. WC-RS in the Yarrangobilly River Catchment (Figure 49) and TR-RS at Talbingo Reservoir (Figure 50) both exceeded the SSGV.

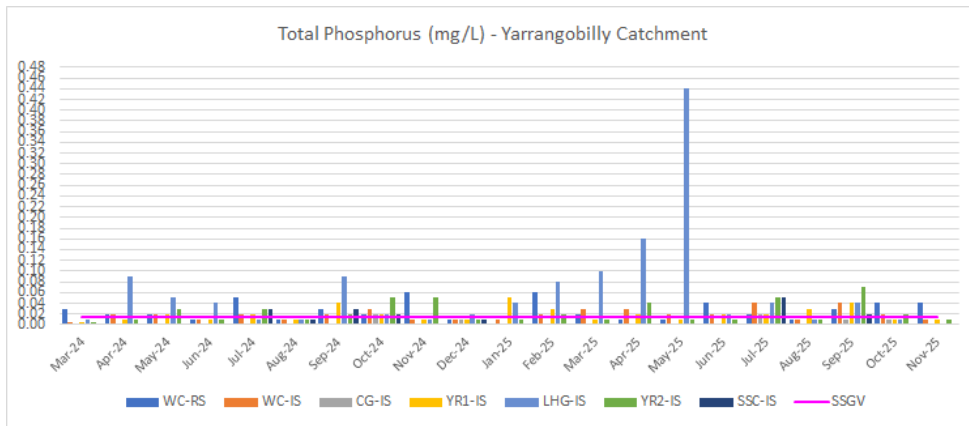


FIGURE 48: TP FOR YARRANGOBILLY RIVER CATCHMENT

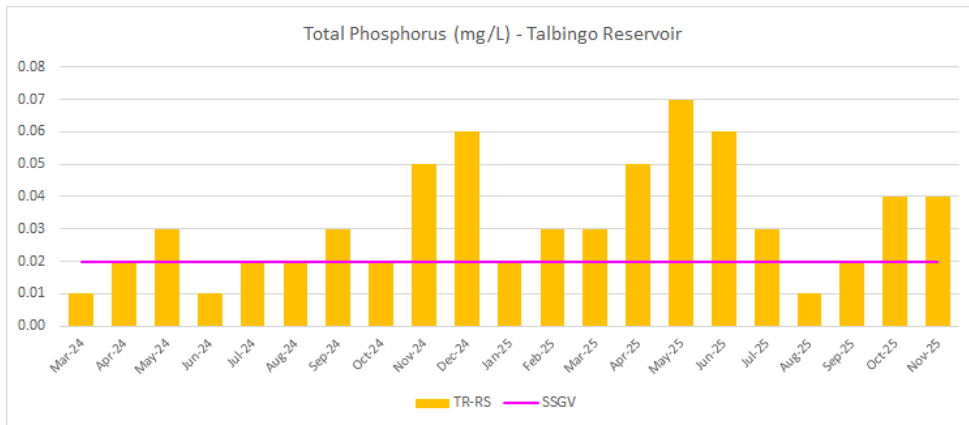


FIGURE 49: TP FOR TALBINGO RESERVOIR

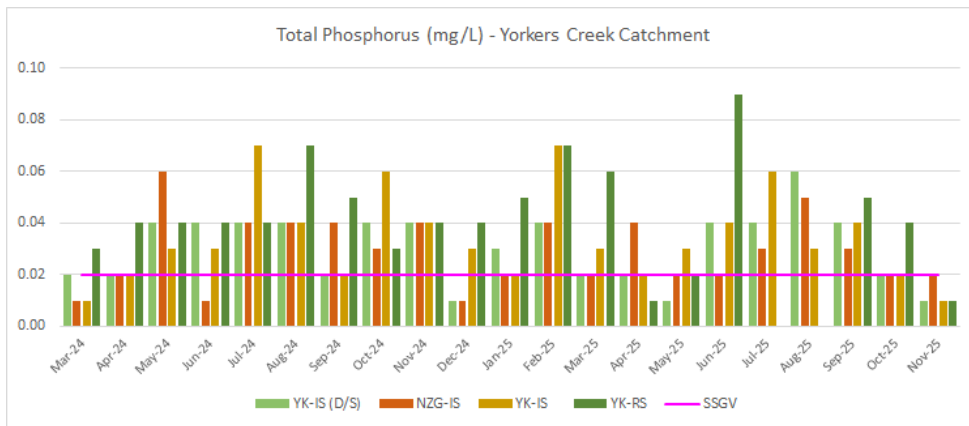


FIGURE 50: TP FOR YORKERS CREEK CATCHMENT

### 5.2.1.17 Reactive Phosphorus

All sites across all catchments measured below the LOR for RP (mg/L), refer to Figure 51 to Figure 53.

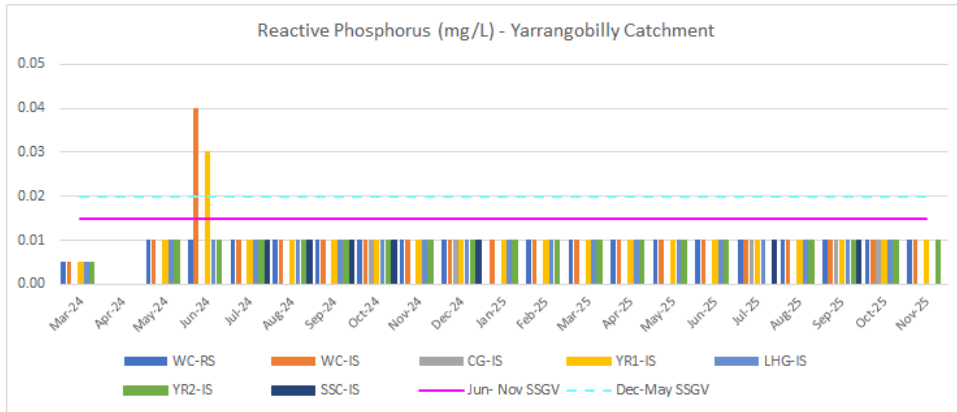


FIGURE 51: RP FOR YARRANGOBILLY RIVER CATCHMENT

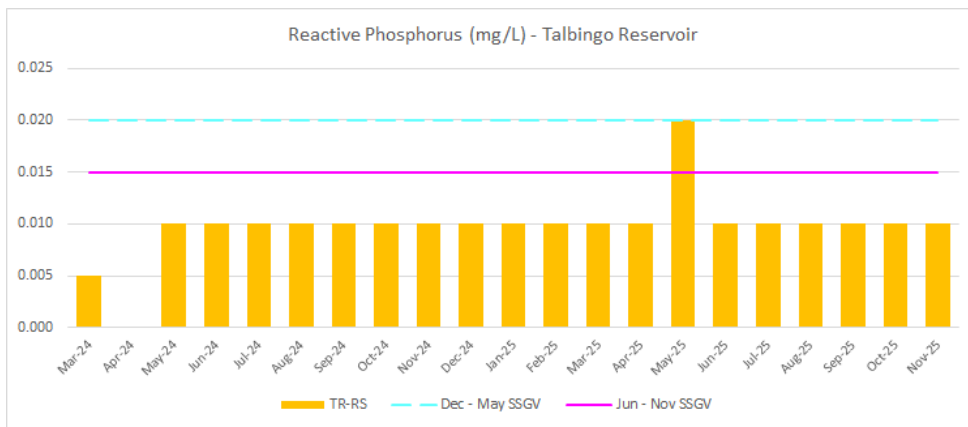


FIGURE 52: RP FOR TALBINGO RESERVOIR

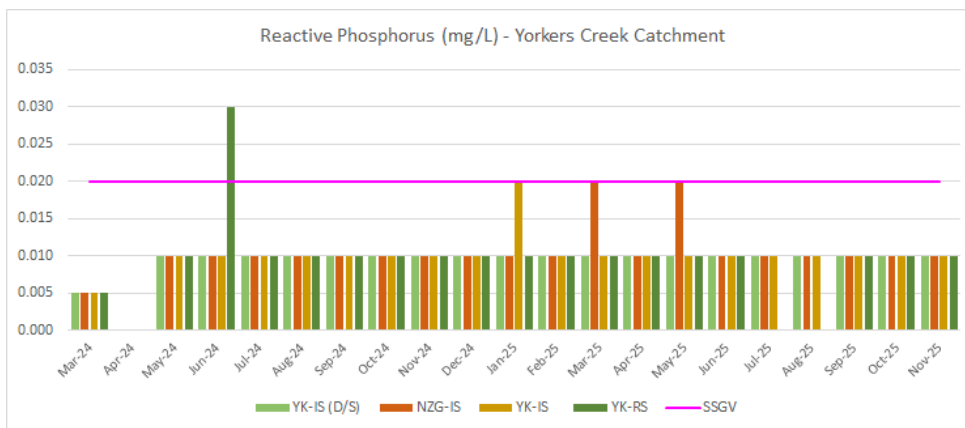


FIGURE 53: RP FOR YORKERS CREEK CATCHMENT

## 5.2.2 Dissolved Metals

Dissolved metals exceeding the relevant SSGV are listed in Table 4.

**Table 4: Results for Dissolved Metals**

DISSOLVED METALS RESULTS				
Analyte	Site	Result (mg/L)	SSGV (mg/L)	Comment
Cd	NZG-IS	0.0002	0.00002	The SSGV for dissolved Cd (mg/L) was exceeded at NZG-IS within Yorkers Creek Catchment. All other sites were within the LOR.
	WC-RS	0.014	0.0002	
Cu	WC-IS	0.005		
	YR1-IS	0.004		
	YR2-IS	0.011		
	TR-RS	0.024		
	YK-IS(D/S)	0.037		
	NZG-IS	0.509		
	YK-IS	0.154		
Fe	YK-RS	0.25	0.23	YK-RS marginally exceeded the SSGV for dissolved Fe (mg/L). All other sites were within the SSGV or below the LOR.
Pb	NZG-IS	0.013	0.001	Dissolved Pb (mg/L) was below the LOR at all sites except NZG-IS and YK-IS within Yorkers Creek Catchment. These two sites exceeded the SSGV during the November 2025 sampling period.
	YK-IS	0.002		
Mn	WC-RS	0.003	0.002	All catchments exhibited dissolved Mn (mg/L) values more than the respective catchment SSGV. In Yarrangobilly River Catchment, two sites (YR1-IS, YR2-IS) recorded values on-par with the SSGV, with the remaining sites exceeding the SSGV.
	WC-IS	0.003		
	TR-RS	0.003		
	YK-RS	0.015	0.003	
	YK-IS (D/S)	0.011		
	NZG-IS	0.006		
	YK-IS	0.017		
Hg	TR-RS	0.001	0.00003	Talbingo Reservoir (TR-RS) exceeded the SSGV for dissolved Hg (mg/L). All other sites were below the LOR.
Zn	WC-RS	0.025	0.002	All sites across all catchments (Yarrangobilly River Catchment, Talbingo Reservoir, Yorkers Creek Catchment) exceeded the SSGV for Zn (mg/L) except YK-RS which was below the LOR.
	WC-IS	0.009		
	YR1-IS	0.012		
	YR2-IS	0.019		
	TR-RS	0.021		
	YK-IS(D/S)	0.023		
	NZG-IS	0.235		
	YK-IS	0.085		

### 5.2.3 Total Metals

Total metals exceeding the DGV are listed in Table 5.

**Table 5: Results for Total Metals**

TOTAL METALS RESULTS				
Analyte	Site	Result (mg/L)	DGV (mg/L)	Comment
Al	WC-IS	0.03	0.027	In November 2025, all sampling locations exceeded the DGV value for Total Al (0.027mg/L) except WC-RS in Yarrangobilly River Catchment, which recorded a value below the DGV.
	YR1-IS	0.05		
	YR2-IS	0.04		
	TR-RS	0.04		
	YK-RS	0.94		
	YK-IS(D/S)	0.27		
	NZG-IS	0.13		
	YK-IS	0.54		
Cr	YK-RS	0.002	0.00001	YK-RS exhibited a value for Cr (mg/L) above the DGV. All other sites were below the LOR.
Cu	WC-RS	0.019	0.001	Cu (mg/L) sampling undertaken in November 2025 recorded values above the DGV at several sites within Yarrangobilly River Catchment and Yorkers Creek Catchment. Talbingo Reservoir recorded Cu (mg/L) values below the LOR.
	WC-IS	0.015		
	YR1-IS	0.014		
	YR2-IS	0.011		
	YK-IS(D/S)	0.061		
	YK-IS	0.002		
Pb	YK-IS(D/S)	0.003	0.001	Pb (mg/L) values exceeded the DGV at one site (YK-IS(D/S) in Yorkers Creek Catchment. All other sites were below the LOR.
Ag	WC-RS	0.005	0.00002	In the November 2025 sampling period, Ag (mg/L) exceeded the DGV at the Yarrangobilly River Catchment reference site (WC-RS). All other sites were below the LOR.
Zn	WC-RS	0.028	0.0024	Several sites in both Yarrangobilly River Catchment and Yorkers Creek Catchment exhibited values exceeding the DGV for Zn (mg/L).
	WC-IS	0.01		
	YR1-IS	0.013		
	YR2-IS	0.017		
	YK-IS(D/S)	0.033		
	YK-IS	0.006		
Fe	YK-RS	0.87	0.3	Yorkers Creek Catchment exceeded the DGV for Fe (mg/L) at all sites except NZG-IS. All other samples within the three catchments (Yarrangobilly River Catchment, Talbingo Reservoir, Yorkers Creek Catchment) were within the respective DGV value or below the LOR.
	YK-IS(D/S)	0.33		
	YK-IS	0.54		

## 6 DISCUSSION

Below is a summary of key observations and discussion points from the November 2025 monitoring results:

- Potential impacts to SWQ:
  - » Transmission line clearing and bulk earthworks activities were ongoing within the Yarrangobilly and Yorkers Creek catchment areas
  - » Impact sites within the Yarrangobilly River catchment are influenced by other activities associated with the Snowy 2.0
  - » TR-RS is located in O'Hares Campground, a popular public recreational area for water based activities including boating. It is also located adjacent to ancillary infrastructure associated with Talbingo Reservoir
  - » Many reference sites and impact sites are located adjacent to publicly accessible tracks used for maintenance and recreational activities
  - » Hoof marks, fauna scats and aquatic fauna indicate presence of fauna in and around waterways increasing potential for erosion of banks and sedimentation into waterways
  - » Vegetative and organic debris within waterways may contribute to nutrient loading
  - » Existing eroded and undercut banks remain a source of sediment input
  - » Shallow or low-flow conditions observed at multiple sites increase susceptibility to SWQ variability
  - » Several sites (CG-IS, LHG-IS, SSC-IS) were dry or had no flow during monitoring, limiting dataset completeness
- Sampling and analysis:
  - » A number of parameters were recorded below (<) the LOR
  - » Some results remain constrained by laboratory LOR relative to SSGV/DGV thresholds
  - » Low flow and shallow conditions increased potential for sample disturbance during collection
  - » Redox, RP and DO (ppm) analyses may be subject to reduced reliability due to holding time exceedances
- SWQ parameters:
  - » Since March 2024, sites at the Yarrangobilly River catchment, including the reference site WC-RS, have consistently exceeded the relevant SSGV/DGV for the following parameters: CaCO<sub>3</sub>, TSS, TDS, redox and total Al
  - » Since March 2024, Talbingo Reservoir has consistently exceeded the relevant SSGV/DGV for the following parameters: DO, pH, turbidity, ammonia, nitrogen oxides, CaCO<sub>3</sub>, TSS, TDS, redox and total Al
  - » Since March 2024, sites at the Yorkers Creek catchment, including the reference site YK-RS, have consistently exceeded the relevant SSGV/DGV for the following parameters: DO, pH, turbidity, dissolved Mn, TP, nitrogen oxides, CaCO<sub>3</sub>, TSS, TDS, redox, total Al and total Fe
  - » Temperature increased across all catchments compared to October 2025
  - » pH:
    - Yarrangobilly River Catchment showed marginal exceedances above SSGV

- Talbingo Reservoir continued to trend below SSGV
- Yorkers Creek Catchment generally exceeded SSGV, with one site below
- » DO (%):
  - Decreased within the Yarrangobilly River Catchment and below SSGV
  - Improved in Talbingo Reservoir and Yorkers Creek Catchment but remained below SSGV
- » SPC and EC:
  - Exceedances recorded across most sites and catchments
  - Notable consistency with previous exceedance trends
- » Turbidity:
  - Generally compliant with SSGV across all catchments
  - Single exceedance recorded at YK-RS
- » TSS:
  - Remained consistent with previous sampling periods
  - Minor increases observed at YK-RS
- » TDS:
  - Exceeded SSGV at all sites across all catchments
- » Redox:
  - Increased across all sites compared to October
  - Remained above SSGV at all locations
- » Nitrogen oxides:
  - Generally below LOR across all sites
  - Isolated exceedances at YR1-IS and YK-IS (D/S)
- » Ammonia:
  - Below LOR at most sites
  - Isolated exceedance at WC-IS
- » TKN:
  - Generally compliant, with exceedances limited to YK-RS and YK-IS (D/S)
- » TN:
  - Generally compliant across all catchments
  - Exceedances recorded at YK-RS and YK-IS (D/S)

- » TP:
  - Below LOR at most sites
  - Exceedances at reference sites WC-RS and TR-RS
- » RP:
  - Below LOR across all sites
- » Widespread exceedances of Cu, Mn and Zn across multiple sites
- » Significant Cu exceedance recorded at NZG-IS
- » Mn exceeded SSGV across all catchments
- » Additional exceedances recorded for Cd (NZG-IS), Pb (NZG-IS, YK-IS) and Hg (TR-RS)
- » Total Al exceeded DGV at most sites
- » Cu exceeded DGV across multiple sites in Yarrangobilly and Yorkers Creek catchments
- » Zn exceeded DGV at several sites across both catchments
- » Fe exceeded DGV across all Yorkers Creek sites
- » Additional exceedances recorded for Cr (YK-RS), Pb (YK-IS D/S) and Ag (WC-RS)
- » Exceedances remain widespread and consistent with established baseline trends
- » Variability in results is strongly influenced by:
  - Low flow conditions
  - Natural catchment characteristics (sediment, organics)
  - Ongoing disturbance from project and external activities
- » Reduced flow conditions in November likely influenced:
  - Concentration of dissolved constituents
  - Increased variability in parameters such as EC, TDS and metals
- » Despite exceedances, field observations (clear water at most sites, presence of aquatic vegetation and fauna) indicate that waterways continue to function and support aquatic ecosystems

## 7 CONCLUSION

Monthly construction SWQ monitoring was undertaken in November 2025 in accordance with EPL 21753 and the revised methodology outlined in Section 3, across the monitoring locations listed in Table 1.

The results indicate that exceedances of SSGV and DGV continue to occur across all catchments (Yarrangobilly River, Talbingo Reservoir and Yorkers Creek), consistent with trends observed since the commencement of construction monitoring in March 2024. These exceedances are not isolated to impact sites and are also present at reference locations, indicating that water quality is influenced by a combination of natural catchment conditions, low flow environments, existing disturbances and broader project-related activities.

During the November 2025 sampling period, increases in temperature and reductions in dissolved oxygen were observed in some catchments, while parameters such as specific conductance, electrical conductivity, total dissolved solids and redox continued to exceed guideline values across multiple sites. Nutrient parameters were generally compliant or below detection limits, with only isolated exceedances recorded. Turbidity and total suspended solids remained largely consistent with previous monitoring periods and within acceptable ranges, indicating no significant increase in sediment mobilisation during the reporting period.

Exceedances of both dissolved and total metals were recorded across multiple sites, with elevated concentrations of copper, manganese, zinc and aluminium consistent with historical results and likely influenced by natural geology, low flow conditions and catchment disturbance.

Overall, the November 2025 monitoring results do not indicate a significant deterioration in surface water quality attributable solely to construction activities. Observations of clear water at most sites and the continued presence of aquatic vegetation and fauna indicate that waterways remain capable of supporting aquatic ecosystems.

Continued implementation of erosion and sediment controls, along with ongoing monitoring, will ensure that potential impacts to surface water quality are identified and managed appropriately throughout the construction phase.

## REFERENCES

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- NGH. (2024). *Baseline Water Quality Report*. NSW: NGH Pty Ltd.
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## Appendix A: Field Sheet (UGL, 2025)



### WATER QUALITY MONITORING FIELD SHEET

Date: 23/11/2025 Personnel: Lauren Coyne / Sarah Ford Sampling Purpose: Monthly WQ Monitoring

Site	Time	Temp (°C)	Water Pressure (mmHg)	DO (%)	SPC (µS/cm)	pH	Turbidity (NTU)	TSS (mg/L)	Observations
DGV:		-	-	90 - 110	30 - 350	6.5 - 8	2 - 25	0.2	Weather Pre 24 hrs: overcast, 0.2mm rain for afternoon
Dec - May SSGV:		-	-	96.2	115	7.85	0.37	0.2	Weather Forecast: Omm
Jun - Nov SSGV:		-	-	89.7	88	7.62	12	1	Weather Time of Sampling: Fine Sunny
✓ WC-RS Wallace Creek	13:30	16.3°C	710.3	76.4	99.2	7.88	0.73		Flowing - rocky bed Overhanging Vegetation - clear visibility
✓ WC-IS Wallace Creek	8:15	14.7	707.1	76.5	95.3	7.84	1.15		Flowing - clear, woody debris and vegetation in stream. Small to large rocks in bed
CG-IS Cave Gully									DRY.
✓ YR1-IS Yarrangobilly River	7:48	16.0	707.3	76.6	111.9	7.93	1.75		- Flowing - Clear, rocky bed Reedy <del>bed</del> Vegetation on banks Overhanging Veg on banks,



## WATER QUALITY MONITORING FIELD SHEET

Date: 23/11/2025 Personnel: Sarah Steel / Lauren Lagve Sampling Purpose: monthly WQ monitoring

Site	Time	Temp (°C)	Water Pressure (mmhg)	DO (%)	SPC (µS/cm)	pH	Turbidity (NTU)	TSS (mg/L)	Observations
									Weather Pre 24 hrs: <u>overcast, 0.2mm rain for afternoon</u>
									Weather Forecast: <u>0mm</u>
									Weather Time of Sampling: <u>Fine - Sunny</u>
<b>LHG-IS</b> Lick Hole Gully									<u>DRY.</u>
✓ <b>YR2-IS</b> Yarrangobilly River	<u>11:13</u>	<u>17</u>	<u>715.1</u>	<u>79.5</u>	<u>116.1</u>	<u>7.79</u>	<u>0.63</u>		<u>flowing, clear water cobble bed. aquatic veg on banks.</u>
<b>SSC-IS</b> Sheep Station Creek									<u>DRY.</u>
✓ <b>TR-RS</b> Talbingo Reservoir	<u>4:26</u>	<u>18.8</u>	<u>710.9</u>	<u>80.7</u>	<u>40.0</u>	<u>7.66</u>	<u>1.05</u>		<ul style="list-style-type: none"> <li>• Reservoir water levels high</li> <li>• clear water</li> <li>• Ducks swimming nearby</li> <li>• no campers @ time of monitoring</li> </ul>



## WATER QUALITY MONITORING FIELD SHEET

Date: 23/11/2025 Personnel: Sarah Steel / Lauren Lough Sampling Purpose: Monthly WQ Monitoring

Site	Time	Temp (°C)	Water Pressure (mmHg)	DO (%)	SPC (µS/cm)	pH	Turbidity (NTU)	TSS (mg/L)	Observations
DGV:		-	-	90 - 110	30 - 350	6.5 - 8	2 - 25	0.2	Weather Pre 24 hrs: <u>overcast, 0.2mm rain for afternoon</u>
Dec - May SSGV:		-	-	96.2	115	7.85	0.37	0.2	Weather Forecast: <u>0mm</u>
Jun - Nov SSGV:		-	-	89.7	88	7.62	5.12	1	Weather Time of Sampling: <u>Fine - Sunny</u>
✓	<b>YK-RS</b> Yorkers Creek	3:42	20.1	662.5	74.5	43.9	6.95	14.06	<ul style="list-style-type: none"> <li>• Flowing; slightly murky appearance</li> <li>• grassy banks</li> <li>• vegetative debris in stream</li> <li>• evidence of horse/deer activity on banks</li> <li>• Access road upstream of site recently upgraded.</li> </ul>
✓	<b>YK-IS (D/S)</b> Yorkers Creek	4:01	15.5	665.9	69.6	24.7	6.98	4.05	<ul style="list-style-type: none"> <li>• clear water, flowing</li> <li>• some algal growth</li> <li>• woody debris in stream</li> <li>• overhanging tree on lamandra's</li> </ul>
✓	<b>NZG-IS</b> New Zealand Gully	3:09	17.8	667.7	67	29.2	6.52	1.80	<ul style="list-style-type: none"> <li>• Clear water; flowing</li> <li>• Evidence of horses/deer impacting bank stability upstream of monitoring site</li> <li>• overhanging vegetation</li> <li>• woody debris</li> <li>• blackberry growing on bank.</li> </ul>
✓	<b>YK-IS</b> Yorkers Creek	3:24	17.2	664.2	67.7	15.7	6.18	6.52	<ul style="list-style-type: none"> <li>• <sup>slightly milky</sup> clear water; flowing</li> <li>• Evidence of sediment deposition on rocks in stream</li> <li>• Evidence of animal (horse/deer) disturbance on bank</li> <li>• overhanging vegetation</li> <li>• woody debris</li> <li>• HLLW activity</li> </ul>



## **Appendix B: COA (ALS, 2025a), QA/QC Assessment (ALS, 2025b) and QCR (ALS, 2025c)**



## CERTIFICATE OF ANALYSIS

Work Order : **ES2537466**  
Client : **UGL LIMITED**  
Contact : LAUREN LOGUE  
Address : Level 4, 40 Miller Street  
North Sydney 2060  
Telephone : ----  
Project : ----  
Order number :  
C-O-C number : ----  
Sampler : EBONY HAMES  
Site :  
Quote number : ES24UGLLIM0001\_V4  
No. of samples received : 10  
No. of samples analysed : 10

Page : 1 of 6  
Laboratory : Environmental Division Sydney  
Contact : Customer Services ES  
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164  
Telephone : +61-2-8784 8555  
Date Samples Received : 26-Nov-2025 16:00  
Date Analysis Commenced : 27-Nov-2025  
Issue Date : 04-Dec-2025 16:07



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW



## General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- EG020: It has been confirmed by re-digestion and re-analysis that dissolved concentration for Copper, Lead and Zinc is higher than total concentration for samples ES2537466-#001, #009 and #010. For all other elements where filtered results are greater than total results, the difference is within experimental variation of the methods.
- EG020: Total Copper results for samples E2537466-#001 and #008 have been confirmed by redigestion and reanalysis.
- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TR-RS	WC-RS	YR2-IS	YR1-IS	YK-RS
Sampling date / time				23-Nov-2025 16:26	23-Nov-2025 15:30	23-Nov-2025 00:00	23-Nov-2025 07:48	23-Nov-2025 15:42	
Compound	CAS Number	LOR	Unit	ES2537466-001	ES2537466-002	ES2537466-003	ES2537466-004	ES2537466-005	
				Result	Result	Result	Result	Result	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	31	52	70	67	42	
<b>EA025: Total Suspended Solids dried at 104 ± 2°C</b>									
Suspended Solids (SS)	----	1	mg/L	1	<1	2	2	9	
<b>ED093F: SAR and Hardness Calculations</b>									
Total Hardness as CaCO3	----	1	mg/L	14	41	51	51	9	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.02	0.02	0.16	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	0.024	0.014	0.011	0.004	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.021	0.025	0.019	0.012	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.003	0.003	0.002	0.002	0.015	
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	0.25	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.05	0.02	0.04	0.05	0.94	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.002	
Copper	7440-50-8	0.001	mg/L	<0.001	0.019	0.011	0.014	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	<0.001	<0.001	0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.028	0.017	0.013	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.009	0.004	0.004	0.010	0.030	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TR-RS	WC-RS	YR2-IS	YR1-IS	YK-RS
Sampling date / time				23-Nov-2025 16:26	23-Nov-2025 15:30	23-Nov-2025 00:00	23-Nov-2025 07:48	23-Nov-2025 15:42	
Compound	CAS Number	LOR	Unit	ES2537466-001	ES2537466-002	ES2537466-003	ES2537466-004	ES2537466-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Silver	7440-22-4	0.001	mg/L	<0.001	<b>0.005</b>	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	<b>0.08</b>	<0.05	<0.05	<b>0.14</b>	<b>0.87</b>	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK026SF: Total CN by Segmented Flow Analyser</b>									
Total Cyanide	57-12-5	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<b>0.01</b>	<b>0.01</b>	<0.01	<b>0.01</b>	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EK061G: Total Kjeldahl Nitrogen By Discrete Analyser</b>									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>	
<b>EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser</b>									
<sup>^</sup> Total Nitrogen as N	----	0.1	mg/L	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>	
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>									
Total Phosphorus as P	----	0.01	mg/L	<b>0.04</b>	<b>0.04</b>	<0.01	<b>0.01</b>	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	YK-IS (D/S)	WC-IS	TR-RS (DUPLICATE)	NZG-IS	YK-IS
Sampling date / time				23-Nov-2025 16:01	23-Nov-2025 08:15	23-Nov-2025 00:00	23-Nov-2025 15:09	23-Nov-2025 00:00	
Compound	CAS Number	LOR	Unit	ES2537466-006	ES2537466-007	ES2537466-008	ES2537466-009	ES2537466-010	
				Result	Result	Result	Result	Result	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	<b>40</b>	<b>54</b>	<b>29</b>	<b>57</b>	<b>34</b>	
<b>EA025: Total Suspended Solids dried at 104 ± 2°C</b>									
Suspended Solids (SS)	----	1	mg/L	<b>2</b>	<1	<1	<1	<b>3</b>	
<b>ED093F: SAR and Hardness Calculations</b>									
Total Hardness as CaCO3	----	1	mg/L	<b>12</b>	<b>41</b>	<b>14</b>	<b>23</b>	<b>12</b>	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<b>0.09</b>	<0.01	<b>0.01</b>	<b>0.08</b>	<b>0.30</b>	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<b>0.0002</b>	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<b>0.037</b>	<b>0.005</b>	<b>0.023</b>	<b>0.509</b>	<b>0.154</b>	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	<b>0.001</b>	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<b>0.013</b>	<b>0.002</b>	
Zinc	7440-66-6	0.005	mg/L	<b>0.023</b>	<b>0.009</b>	<b>0.016</b>	<b>0.235</b>	<b>0.085</b>	
Manganese	7439-96-5	0.001	mg/L	<b>0.011</b>	<b>0.003</b>	<b>0.003</b>	<b>0.006</b>	<b>0.017</b>	
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	<b>0.15</b>	<0.05	<0.05	<b>0.08</b>	<b>0.23</b>	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<b>0.27</b>	<b>0.03</b>	<b>0.06</b>	<b>0.13</b>	<b>0.54</b>	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<b>0.001</b>	
Copper	7440-50-8	0.001	mg/L	<b>0.061</b>	<b>0.015</b>	<b>0.032</b>	<0.001	<b>0.002</b>	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<b>0.003</b>	<0.001	<b>0.001</b>	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<b>0.033</b>	<b>0.010</b>	<b>0.018</b>	<0.005	<b>0.006</b>	
Manganese	7439-96-5	0.001	mg/L	<b>0.013</b>	<b>0.005</b>	<b>0.009</b>	<b>0.008</b>	<b>0.019</b>	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	YK-IS (D/S)	WC-IS	TR-RS (DUPLICATE)	NZG-IS	YK-IS
Sampling date / time				23-Nov-2025 16:01	23-Nov-2025 08:15	23-Nov-2025 00:00	23-Nov-2025 15:09	23-Nov-2025 00:00	
Compound	CAS Number	LOR	Unit	ES2537466-006	ES2537466-007	ES2537466-008	ES2537466-009	ES2537466-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	<b>0.33</b>	<0.05	<b>0.05</b>	<b>0.18</b>	<b>0.54</b>	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK026SF: Total CN by Segmented Flow Analyser</b>									
Total Cyanide	57-12-5	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<b>0.01</b>	<b>0.07</b>	<0.01	<0.01	<0.01	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<b>0.01</b>	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<b>0.09</b>	<0.01	<0.01	<0.01	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.09</b>	<0.01	<0.01	<b>0.01</b>	<0.01	
<b>EK061G: Total Kjeldahl Nitrogen By Discrete Analyser</b>									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<b>0.3</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	
<b>EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser</b>									
^ Total Nitrogen as N	----	0.1	mg/L	<b>0.4</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>									
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	<0.01	<b>0.02</b>	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	



## Appendix C: November 2025 SWQ Monitoring Results





Aug-25	No	8.8	89.4	-	12.1	8.4	7.30	250.3	23.9	0.12	0.001	0.0002	0.001	0.001	0.002	0.08	0.001	0.004	0.0001	0.001	0.1	0.03	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.006	0.001	0.001	0.005	0.17	0.0001
Sep-25	No	7.2	87.9	-	10.9	8.0	6.80	234.3	2.88	0.04	0.001	0.0002	0.001	0.002	0.06	0.001	0.004	0.0001	0.001	0.2	0.06	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.006	0.001	0.001	0.005	0.18	0.0002	
Oct-25	No	10.1	87.8	-	11.1	46.7	7.96	112.3	3.38	0.08	0.001	0.0002	0.001	0.002	0.07	0.001	0.004	0.0001	0.001	0.1	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.007	0.001	0.001	0.005	0.17	0.0001	
Nov-25	No	17.5	87.8	-	11.1	25.7	4.71	131.1	1.81	0.08	0.001	0.0002	0.001	0.002	0.07	0.001	0.004	0.0001	0.001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.008	0.001	0.001	0.005	0.18	0.0001
Mar-24	No	11.4	78.9	8.53	15	28.1	6.70	41.1	21.44	0.05	0.00015	0.00001	0.000005	0.001	0.001	0.4	0.00015	0.013	0.00015	0.00005	0.1	0.1	0.00001	0.004	0.005	0.016	0.005	1	0.1	21	3												
Apr-24	No	6.8	86.3	-	10.8	7.88	7	52.6	0.55	0.001	0.0001	0.001	0.001	0.002	0.15	0.001	0.014	0.0001	0.001	0.001	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.014	0.001	0.001	0.005	0.23	0.0001	
May-24	No	4.7	82.7	-	10.8	6.43	0.2	0.06	0.001	0.0001	0.001	0.001	0.001	0.002	0.1	0.001	0.011	0.0001	0.001	0.001	0.2	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.014	0.001	0.001	0.005	0.16	0.0001	
Jun-24	No	3.9	83.1	-	10.1	7.88	7.88	0.08	0.001	0.0001	0.001	0.001	0.001	0.002	0.15	0.001	0.011	0.0001	0.001	0.001	0.3	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.014	0.001	0.001	0.005	0.46	0.0001	
Jul-24	No	3.2	82.8	-	10.8	7.88	11.1	0.31	0.001	0.0001	0.001	0.001	0.001	0.002	0.15	0.001	0.011	0.0001	0.001	0.001	0.3	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.015	0.001	0.001	0.005	0.66	0.0001	
Aug-24	No	3.2	81.1	-	10.8	5.28	7.88	0.001	0.0001	0.001	0.001	0.001	0.001	0.002	0.15	0.001	0.011	0.0001	0.001	0.001	0.4	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.006	0.001	0.001	0.005	0.68	0.0001	
Sep-24	No	9.3	83.4	-	23.8	7.41	6.24	0.09	0.001	0.0001	0.001	0.001	0.001	0.002	0.13	0.001	0.008	0.0001	0.001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.012	0.001	0.001	0.005	0.26	0.0001
Oct-24	No	13.7	86.1	-	23.7	7.88	3.1	0.07	0.001	0.0001	0.001	0.001	0.001	0.002	0.06	0.001	0.008	0.0001	0.001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.006	0.001	0.001	0.005	0.23	0.0001
Nov-24	No	14.7	83.3	8.8	27.7	8	7.87	27	4.6	0.06	0.001	0.0001	0.001	0.001	0.02	0.12	0.001	0.014	0.0001	0.001	0.1	0.04	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.012	0.001	0.001	0.005	0.38	0.0001
Dec-24	No	18.4	80.2	8.7	21.4	35	7.35	258	19.82	0.08	0.001	0.0001	0.001	0.001	0.002	0.16	0.001	0.017	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.006	0.001	0.001	0.005	0.63	0.0001
Jan-25	No	16.1	89.9	8.7	25.7	43	7.88	23	1.98	0.01	0.001	0.0001	0.001	0.001	0.002	0.12	0.001	0.011	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.005	0.001	0.001	0.005	0.61	0.0001
Feb-25	No	7.1	74.8	8.8	6.01	175	3.85	0.001	0.0001	0.001	0.001	0.001	0.001	0.002	0.15	0.001	0.011	0.0001	0.001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.006	0.001	0.001	0.005	1.31	0.0001
Mar-25	No	17.6	71.8	8.8	10.5	46	6.77	181	33.88	0.02	0.001	0.0001	0.001	0.001	0.002	0.19	0.001	0.008	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.004	0.001	0.001	0.005	0.84	0.0001
Apr-25	Yes	11.9	65.4	9.7	10.9	46	4.84	18	7.27	0.07	0.001	0.0001	0.001	0.001	0.002	0.19	0.001	0.008	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.005	0.001	0.001	0.005	0.88	0.0001
May-25	No	4.9	70.8	-	9.7	6	7.21	15.8	5.62	0.08	0.001	0.0001	0.001	0.001	0.002	0.18	0.001	0.011	0.0001	0.001	0.1	0.03	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.007	0.001	0.001	0.005	0.98	0.0001
Jun-25	No	8.9	84.8	-	8.9	8.6	8.67	130.8	7.88	0.14	0.001	0.0001	0.001	0.001	0.002	0.2	0.001	0.014	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.011	0.001	0.001	0.005	0.28	0.0001
Jul-25	No	5.7	81.2	-	7.9	5	7.97	108.7	9.32	0.26	0.001	0.0001	0.001	0.001	0.002	0.2	0.001	0.004	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.004	0.001	0.001	0.005	0.2	0.0001
Aug-25	No	6.3	84.1	-	12.2	7.8	7.90	252.3	3.9	0.18	0.001	0.0001	0.001	0.001	0.002	0.14	0.001	0.008	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.008	0.001	0.001	0.005	0.26	0.0001
Sep-25	No	7	84.2	-	10.8	29.1	7.88	123.8	7.52	0.1	0.001	0.0001	0.001	0.001	0.002	0.12	0.001	0.008	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.008	0.001	0.001	0.005	0.28	0.0001
Oct-25	No	11	41.9	-	10.1	7.88	6.61	101.8	5.87	0.13	0.001	0.0001	0.001	0.001	0.002	0.14	0.001	0.008	0.0001	0.001	0.1	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.013	0.001	0.001	0.005	0.31	0.0001
Nov-25	No	17.2	87.1	-	15.7	8.1	6.18	8.1	6.52	0.3	0.001	0.0001	0.001	0.001	0.002	0.23	0.001	0.011	0.0001	0.001	0.2	0.02	0.001	0.005	0.020	0.01	0.01	0.1	0.1	0.03	1	0.2	0.001	0.0002	0.001	0.001	0.001	0.019	0.001	0.001	0.005	0.51	0.0001

  Reference Site exceeds SSGV  
  Impact Site Result exceeds SSGV or DGV  
  Result exceeds the Limit of Reporting



## Appendix D: Calibration Certificate

## CALIBRATION CERTIFICATE - WATER

Invoice No: 17218

Equipment Received: YSI ProDSS

Handheld S/N 23H104391

Cable S/N:

Included Items:

### SENSOR CALIBRATION DETAILS

	Pre Calibration	Post Calibration	Accuracy	Pass	Fail
Temp	Factory	Calibrated	+/- 0.2C	<input checked="" type="checkbox"/>	<input type="checkbox"/>
pH	4.1	pH 4.00	+/- 0.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
pH	7	pH 7.00	+/- 0.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ORP	220	225.3mV@24.3	+/- 30mV	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conductivity <input type="checkbox"/>	12950uS/cm	12900uS/cm	+/- 0.5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DO <input type="checkbox"/>	98%	100% @763.3	+/- 2%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Turbidity	0	0 FNU	+/- 0.3 FNU	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Turbidity	118	124 FNU	+/- 20 FNU	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			+/-	<input type="checkbox"/>	<input type="checkbox"/>
			+/-	<input type="checkbox"/>	<input type="checkbox"/>
			+/-	<input type="checkbox"/>	<input type="checkbox"/>

#### Findings/ Recommendations /Comments:

- 1/ DO cap and calibration cup seal replaced.
- 2/ Firmware version upgraded.
- 3/ Calibrated.
- 4/

This is to certify that where possible, this instrument has been calibrated in accordance with the manufacturer's calibration procedure as recommended in the instrument service manual.

Regards,

*Navid Black*

 Equipment Specialist  
 ECO Environmental Holdings

06-Nov-2025