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REPORT

QUATERLY ENVIRONMENTAL WATER REPORT SEPTEMBER 2024 – NOVEMBER 2024

S2-FGJV-ENV-REP-0118

REV A

APRIL, 2025

ABSTRACT
This Report has been prepared to satisfy the reporting requirements in the Main Works – Water Management Plan (WMP) and to meet Condition of Approval (CoA) 31(c)(d) of the Infrastructure Approval Schedule which requires publicly available reporting of the outcomes of the WMP. The Report provides commentary on the performance of the monitoring programs as part of the WMP.

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ABBREVIATIONS AND DEFINITIONS

Acronym	Definition
AWS	Automatic weather stations
BoM	Bureau of Meteorology
CoA	Condition of Approval
ECVT	Emergency Cable and Ventilation Tunnel
EPL	Environmental Protection Licence
FGJV	Future Generation Joint Venture
MAT	Main Access Tunnel
MDB	Murray Darling Basin
NEM	National Electricity Market
SHL	Snowy Hydro Limited
Snowy Scheme	Snowy Mountains Hydro-electric Scheme
SWMP	Surface Water Management Plan
TARP	Trigger Action Response Plan
TBM	Tunnel Boring Machine
WMP	Water Management Plan
WQO	Water Quality Objectives

1. INTRODUCTION

Snowy Hydro Limited (SHL) is constructing a pumped hydro-electric expansion of the Snowy Mountains Hydro-electric Scheme (Snowy Scheme), called Snowy 2.0. Snowy 2.0 will be built by the delivery of two projects: Exploratory Works and Snowy 2.0 Main Works (which is ongoing).

Snowy 2.0 is a pumped hydro-electric project that will link the existing Tantangara and Talbingo reservoirs through a series of new underground tunnels and a hydro-electric power station. Most of the project's facilities will be built underground, with approximately 27 kilometres of concrete-lined tunnels constructed to link the two reservoirs and a further 20 kilometres of tunnels required to support the facility. Intake and outlet structures will be built at both Tantangara and Talbingo Reservoirs.

Snowy 2.0 will increase the generation capacity of the Snowy Scheme by an additional 2,200 MW, and at full capacity will provide approximately 350,000 MWh of large-scale energy storage to the National Electricity Market (NEM). This will be enough to ensure the stability and reliability of the NEM, even during prolonged periods of adverse weather conditions.
WeBuild, Clough and Lane have formed the Future Generation Joint Venture (FGJV) and have been engaged to deliver both Stage 2 of Exploratory Works and Snowy 2.0 Main Works.

2. PURPOSE

This Environmental Water Report has been prepared to satisfy the reporting requirements in the Main Works – Water Management Plan (WMP) and to meet Infrastructure Approval CSSI 9687 (CoA) Schedule 3, Condition 31(c)(d) which requires publicly available reporting of the outcomes of the WMP. The Environmental Water Report is intended to provide commentary on the performance of the monitoring programs as part of the WMP (identified in Table 2-1).

Table 2-1: Monitoring overview

Aspect	Objective
Surface Water Monitoring Program	
Routine receiving surface water quality monitoring	• Inform and assess the performance of management processes/measures that seek to minimise the Project's impact on surface water quality. • Help determine source and extent of any water quality changes. • Collect baseline data to characterise water quality and determine site specific values.
Event based wet weather overtopping water quality monitoring	
Groundwater Monitoring Program	
Groundwater level monitoring	• Inform and assess the performance of management. • Processes/measures that seek to minimise the Project's impact on regional and local (including alluvial) aquifers and GDEs.
Groundwater quality monitoring	
Water extraction monitoring	• Inform and assess water consumption, site water balance and compliance with water access licences.

3. OVERVIEW

3.1 Reporting Period

This Environmental Water Report covers the monitoring period from 01 September to 30 November 2024.

3.2 Construction progress

Table 3-1 summarises the key construction activities which have been undertaken during the reporting period.

Table 3-1: Key construction activities for 01 September to 30 November 2024.

Location	Key construction activities
Lobs Hole Ravine Road	• Asphalt laying of Ravine Road is completed. Signs and line marking remains.
Lobs Hole	• Lobs Hole, Marica West HDD BH2 drilling completed. • Lobs Hole, Marica West HDD BH3 drilling completed. MAIN YARD • LH Main Office Expansion – Design for civil works completed, building IFC completed and under SHL review. Bulk earthworks completed & footings for buildings ongoing. • LH Accommodation (Camp Exp.) – IFC currently in progress. Fabrication of blocks 1 & 2 ongoing. LH Accommodation (Camp Exp.) – Earth works and utility relocation ongoing. • Construction and commissioning of 350 mm pipeline is completed. ECVT • TBM 1 has installed 10 IPS rings in the reporting period. • Grouting in LST and other testing works ongoing.
Marica	TRUNK SERVICES (LH, Marica, Gooandra & Tantangara (electrical connections from Talbingo substation to TBM3 Florence) • Preparation works for steel casing installation are ongoing. • Gooandra, HDD & trenching works, HV cable pulling, conduits installation: 100% progress & Black filling completed. Rectification of defects ongoing. • Marica trenching work completed. • USS excavation works ongoing.
Rock Forest	• NA – site under operational use as laydown area.
Talbingo	• Stage 2 excavation is ongoing. RAVINE BAY SPOIL AREA: • Cell 2 works completed, 290924 m3 spoil placed. • Cell 2 remaining sections excluding embankment and bund areas earth works ongoing. • Foundation for GCL (geo-synthetic clay liner) cell 2 ongoing. • Spoil placement ongoing from intake and D&B tunnel.
Tantangara	• In HRT, TBM has installed 122 rings during the period. • STP processing for muck coming from TBM3 ongoing. • Civil and 33 kV cable pulling is completed.

4. WEATHER CONDITIONS

There are several weather stations along the alignment of the project that report real-time data. These include:

- "Lobs Hole" - which is an Automatic Weather Station managed by FGJV in Lobs Hole construction site.
- "Cabramurra" - an Automatic Weather Station located near the lookout in the Cabramurra township managed by the Bureau of Meteorology
- "Tantangara" - an Automatic Weather Station managed by FGJV in Tantangara construction site.

The Tantangara and Cabramurra gauges are in sub-alpine environments, with elevations of approximately 1220 m and 1475 m, respectively. Cabramurra records substantially higher annual rainfall amount than the lower-elevation gauges at Lobs Hole and Tantangara. Tantangara and Lobs Hole weather stations record actual onsite conditions at the respective construction sites, while Cabramurra weather station, at 1470 m is representative of conditions at Marica – which has an elevation of 1480 m and is approximately 15 km north of the Cabramurra Station.

A summary of climate data for the ravine and plateau areas is provided in Table 4.1

Table 4-1: Weather conditions for 01 September to 30 November 2024.

Parameter	Lobs Hole[1]			Marica (Cabramurra)			Tantangara[2]		
	Sep	Oct	Nov	Sep	Oct	Nov	Sep	Oct	Nov
Temperature									
Mean maximum	22.4	25.6	32	14.5	17.1	22.5	19.6	21.8	27.4
Mean minimum	-3.3	0.5	5.2	-1.4	2.2	5.2	-8.4	-2.3	2.1
Rainfall									
Monthly	87.2	68.6	93	164.4	71	79.4	102.4	39.8	74.8
Long Term Average	88.33	98.2	127.87	134.9	166.05	176.45	93.65	87.35	131.1

1. Lobs Hole long term average rainfall is taken from the Tumbarumba weather station.
2. Tantangara long term average rainfall is taken from the Adaminaby Alpine Tourist Park weather station.

Based on the information shown regarding rainfall and temperature, the rainfall received in the Lobs Hole during the quarter, in general, is lower than the long-term average. In November, the most significant amount of rainfall was received, with 93 mm for the month. It is also observed that the Marica site received the most significant amount of rainfall during the quarter, with September being the highest month with 164.4 mm, and the long-term average is highest in comparison with Lobs Hole and Tantangara during the reported period. The rainfall in Tantangara is higher in September, with 102.4 mm than the long-term average.

5. SURFACE WATER MONITORING PROGRAM

5.1 Routine surface water quality monitoring

Routine surface water quality monitoring is undertaken in accordance with CoA Condition 31 and the Environment Protection Licence No. 21266 (EPL - 21266) to determine if project activities are resulting in any impacts to receiving water quality against the Water Quality Objectives (WQO). The water sampling points and specifications are detailed in Appendix B.
Publicly available surface water quality monitoring results undertaken in accordance with EPL - 21266 can be accessed here.
During this reported period, the surface water monitoring revealed exceedances in pH, dissolved oxygen, and turbidity at certain EPL points such as EPL5, EPL6, EPL8, EPL9 EPL12, EPL15, EPL16 at Lobs Hole. These deviations are likely attributed to seasonal fluctuations, such as snowfall and increased flow velocity in September 2024, which contributed to elevated runoff and rainfall events.

It was also observed pH and dissolved oxygen exceedances at (EPL30, EPL31, EPL33, EPL34, and EPL35), these exceedances align with historical data for Nungar Creek, Kellys Plain Creek, and the Murrumbidgee River, where similar trends have been observed, particularly during periods of low flow.

The spikes detected in surface water results for Nitrogen and Phosphorus levels may be attributed to a combination of factors, including reduced water levels and rising surface temperatures. Additionally, elevated electrical conductivity (EC) and turbidity levels recorded towards the end of the reporting period appear to be influenced by rainfall that occurred shortly before sampling. In the leachate basin locations, increased nutrient levels, temperature, and conductivity and these changes are likely linked to the presence of algal blooms during the dry season.

Exceedances in phosphorus and nutrients were detected at some locations, including EPL8, EPL14, EPL8, EPL16, and EPL24 at Lobs Hole and EPL36, EPL37 at Rock Forest, these exceedances are likely influenced by dry weather conditions, which can concentrate nutrients in water bodies. Notably, nitrogen levels, particularly those under TARP conditions are consistently monitored.

5.2 Event based monitoring

Event based wet weather overtopping water quality monitoring is undertaken in accordance with the SWMP Trigger Action Response Plan (TARP 2) to monitor stormwater overtopping sediment basin discharges. Sediment basins for the Project have been designed to meet the design rainfalls depths identified in Table 5-1.

Table 5-1: Design rainfall depths (SWMP Section 5.1.1)

Catchment	Description	85th percentile, 5-day rainfall (mm)	90th percentile, 5-day rainfall (mm)	95th percentile, 5-day rainfall (mm)
Yarrangobilly River	Surface works at Lobs Hole and Marica	28.1	35.6	49.0
Upper Eucumbene River	Surface works between Marica and the Snowy Mountain Highway	35.2	43.4	56.9

Catchment	Description	85th percentile, 5-day rainfall (mm)	90th percentile, 5-day rainfall (mm)	95th percentile, 5-day rainfall (mm)
Tantangara construction compound	Surface works adjacent to the southern portion of Tantangara Reservoir	30.5	37.0	51.0
Goorudee Rivulet	Surface works at Rock Forest	20.0	25.7	36.1

During the reporting period, rainfall exceeded the design rainfall criteria four times, including:

- 25/09/2024 – 26/09/2024 (48.2 mm – Lobs Hole, 47.6 mm – Tantangara)
- 15/10/2024 – 20/10/2024 (51.2 mm – Lobs Hole)
- 27/11/2024 – 30/11/2024 (58.2 mm Lobs Hole)

Across the sites, water quality results of upstream and downstream were generally consistent following significant rainfall events however, turbidity, electrical conductivity, dissolved oxygen, and pH frequently exceeded the WQO. It is identified in the Surface Water Management Plan that during periods of wet weather, the WQO are frequently exceeded. Water samples were collected for comprehensive water testing and the EPA were notified of the releases in accordance with R4.1 of EPL 21266.

6. GROUNDWATER MONITORING PROGRAM

6.1 Groundwater Quality

Low pH levels were observed upstream at Tantangara and downstream at Lobs Hole, which is related to the weather conditions. Some rain during the reported period affected the water quality due to runoff. Elevated levels of nutrients were observed mainly close to the spoil emplacement areas (GF01) such as EPL 58, 05 and 96. However, the weekly monitoring sampling is ongoing, and some actions have been taken throughout the year.
Nitrogen investigation is still ongoing, and the comprehensive weekly sampling is being taken in GF01, and data is being analysed.
During the year's fourth quarter, FGJV remained committed to mitigating environmental impacts. The construction and environmental teams have been working together through different actions, which are mentioned below

- Weekly environmental inspections
- Nitrogen investigations (Sampling and Data analysis)
- Improvements in work areas (Ravine Bay spoil emplacement set up)
- Improvements in the water treatment plan

6.2 Groundwater Levels

Groundwater level monitoring is undertaken by the proponent in accordance with the Groundwater monitoring program to determine groundwater drawdown as a result from the Project.

6.3 Groundwater Inflows

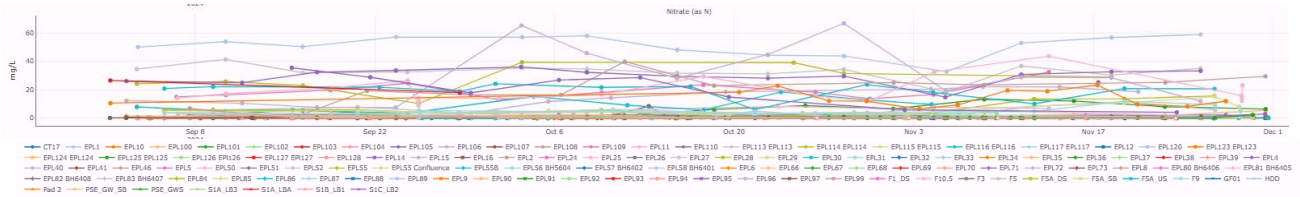
Groundwater inflow into the tunnels is monitored during construction. This data is required to monitor the volume of extracted groundwater against water access licence limits (Table 6-1).

Table 6-2: Water access licence

Water Access Licence	Project	Water Source	Share (ML)
WAL42407 – Specific Purpose Access Licence	Exploratory Works	Upper Tumut water source	227
WAL42408 – Groundwater Licence	Exploratory Works	Lachlan Fold Belt MDB	0
WAL42960 – Groundwater Licence	Exploratory Works	Lachlan Fold Belt MDB	354
RO13-19-093 – via Controlled Allocation	Main Works	Lachlan Fold Belt MDB	3,375
RO1-19-092 – via Controlled Allocation	Main Works	Lachlan Fold Belt South Coast	1,722
Specific Purpose Access Licence	Main Works	Tantangara Water Source	532

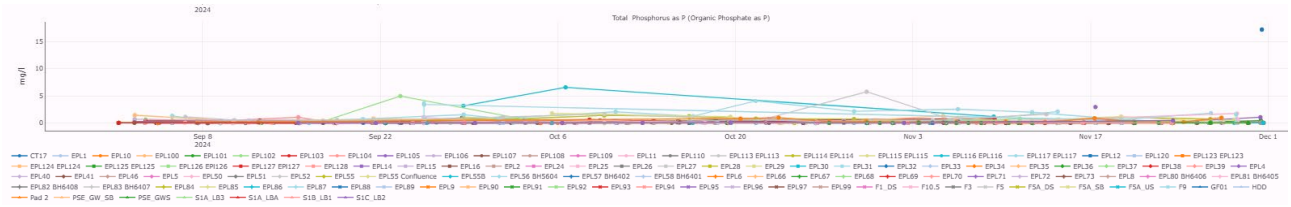
7. TRENDS

Analytical trends were primarily stable throughout the reporting period, with notable occurrences listed as follows:

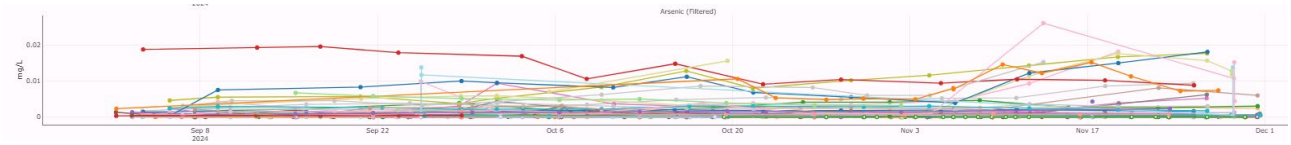


- Nitrate (as N) showed a slight upwards trend across all locations during the reporting period.

- Total Phosphorous reported a minor upwards analytical trend throughout the reporting period.



- Dissolved Arsenic was observed with an increasing analytical trend across the reporting period.



8. CONCLUSION

During the reporting period, exceedances are observed in DO, pH and turbidity for surface water. Most of the exceedances are found at representative points in the sediment basins. This water is being reused on-site only for dust suppression, and on different occasions, it is sent to the water treatment plant to be treated and meet the reuse criteria. There were also exceedances observed in DO, pH and turbidity upstream and downstream in several EPL points during rain periods, which altered the physical-chemical water quality due to runoff and nutrients carried over.

The water discharge during the reported period was minimal, and not much water was discharged, which is why the exceedances are related to natural conditions such as weather and algal bloom presence. The water discharge will still be limited as part of the mitigation plan from FGJV.

The metals were within the range criteria for the reporting period, and some exceedances were consistent with the background (Refer to Appendix A). Some exceedances in nutrients were observed within the surface (EPL24, 52, 55, 84 and 86) and groundwater (EPL58, 83, 87, 95 and 97) levels; as discussed, these EPL locations are closer to the spoil emplacement area, which is being heavily monitored. FGJV has been committed to mitigating the impact and applying the lessons learned to future setting-up areas (Ravine Bay and Rock Forest).

APPENDIX A – BACKGROUND CONDITIONS

SURFACE WATER

	PLATEAU	RAVINE
Major watercourses1 (Dry weather)	• pH generally ranges between 6.2 and 8.5, with occasional lower and upper bound exceedances. • Carbonate and salinity vary seasonally, with higher levels occurring in summer/autumn than winter/spring. • Low concentrations of suspended solids and low turbidity. • Total nitrogen and phosphorus concentrations exceeded WQO values occasionally. • Aluminium concentrations exceeded the WQO value on a frequent basis. Some exceedances were more than 4 x WQO values. • Copper, iron, lead and zinc concentrations exceeded WQO values on an occasional basis. Other metals are generally below WQO values • The water quality during wet weather conditions is poorly understood. It is expected that concentrations of suspended sediment, nutrients, and some metals would be higher than dry weather concentrations.	• pH ranges between 6.2 to 8.5, with occasional lower and upper bound exceedances. • Low concentrations of suspended solids and low turbidity. • Carbonate and salinity vary seasonally, with higher levels occurring in summer/autumn than winter/spring. • Total nitrogen and phosphorus concentrations exceeded WQO values occasionally. • Aluminium concentrations in the Yarrangobilly River exceeded WQO values frequently in winter/spring and occasionally in summer/autumn. Some exceedances were more than 4 x WQO values. • Copper, chromium and zinc concentrations exceeded WQO values occasionally. Other metals are generally below WQO values. • The understanding of water quality during wet weather conditions is informed by data from monitoring undertaken in March and May 2019 following moderate rainfall. Available data indicates that receiving water quality during wet weather conditions is generally poorer relative to dry weather conditions with higher turbidity, lower pH, higher nutrients and metals such as copper and zinc. The median (from five samples) copper concentration was 6 x the WQO value.
Minor watercourses (near proposed surface infrastructure	The water quality of minor watercourses near the Tantangara construction compound is generally poorer than major watercourses, with total phosphorus, total nitrogen and aluminium all exceeding WQO values on a frequent basis. Turbidity, copper and iron exceeded WQO values on an occasional basis.	The water quality of minor watercourses in Lobs Hole is generally poorer than major watercourses, with turbidity, total phosphorus, copper and zinc exceeding WQO values on a frequent basis. Total nitrogen, arsenic and aluminium exceeded WQO values on an occasional basis.

Runoff from existing disturbed areas	No sampling from existing disturbed areas has been undertaken at plateau.	Runoff samples were collected from existing disturbed areas in Lobs Hole such as access tracks and remnant copper mining areas in May and March 2019. Disturbed area runoff is characterised as being mildly acidic, having very high suspended sediment and turbidity levels, high total nitrogen and total phosphorous, and very high aluminium and copper concentrations. During wet weather conditions (when runoff is occurring to local watercourses in Lobs Hole), the water quality in the Yarrangobilly River is expected to be degraded as it passes through Lobs Hole.

Notes: 1. Major watercourses in plateau refer to the Murrumbidgee and Eucumbene rivers, Tantangara, Gooandra, Nungar and Kellys Plain creeks. Major watercourses in ravine refers to the Yarrangobilly River and Wallaces Creek.
2. General note: exceedances are described in the WCR as:
- frequent if the WQO value was exceeded in 20% or more of samples; and
- occasional if the WQO value was exceeded in at least one sample, but in less than 20% of samples.

RESERVOIR
TALBINGO

Water quality characteristics are described as follows:

- pH ranges between 6.3 and 8.2, with occasional lower and upper bound exceedances.
- Low concentrations of suspended solids and low turbidity.
- Carbonate and salinity vary seasonally, with higher levels occurring in summer/autumn, correlati ng with the higher salinity of streamflow over summer and autumn months.
- Oxidised nitrogen concentrations exceeded WQO values frequently in winter/spring and o ccasionally in summer/autumn. This is the opposite trend to the Yarrangobilly River, were exce edances are more likely to occur in summer/autumn.
- Ammonia concentrations frequently exceed WQO values during winter/spring, corelating with th e elevated oxidised nitrogen.
- Total phosphorus concentrations exceed WQO values in all summer/autumn samples and in ap proximately 25% of winter/spring samples.
- All dissolved metal concentrations were below WQO values except for:
- *Copper and zinc concentrations exceeded WQO values frequently in summer/autumn and occasionally in winter/spring; and
- *Chromium (total) and lead concentrations occasionally exceeded WQO values in summer/autu mn.

It is noted that all but one of the copper and zinc exceedances occurred during March 2018 samplin g, where 80% of samples exceeded the WQO values. Different analysis methods (consistent with th e methods applied more broadly to EIS sampling) were applied to subsequent sampling (post-March 2018).

- Reservoir water quality during and following wet weather conditions is poorly understood. There is potential for elevated turbidity, nutrients and some metals to occur near watercourse inflow lo cations for several weeks following a substantial runoff event.

TANTANGARA

Water quality characteristics are described as follows:

- pH ranges between 6.6 and 8.0, with one lower and upper bound exceedance occurring.
- Low levels of suspended solids and low turbidity.
- Carbonate and salinity vary seasonally, with higher levels occurring in summer/autumn.
- Oxidised nitrogen and ammonia occasionally exceeded WQO values in summer/autumn.
- Total phosphorus frequently exceeded WQO values during the reporting period.
- Reactive phosphorus occasionally exceeded WQO values.
- All dissolved metal concentrations were below WQO values except for:
- Dissolved aluminium concentrations exceeded WQO values throughout the reporting period;
- Dissolved copper, iron and zinc exceeded WQO's during summer and autumn periods; and
- Chromium cobalt and lead were observed exceeding WQO's primarily through summer.
- Reservoir water quality during and following wet weather conditions was poorly understood during the data collection phase of background collection.

APPENDIX B – EPL RESULTS

2024 EPL 21266 In Situ Water Quality Measurements
EPL Monthly Monitoring September 2024

Table 1 - Surface Water Quality Data
River and Minor Watercourses

	Water Quality Objectives (see note 1)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	90 - 110	-	30 - 350	-	6.5 - 8.0	-	2 - 25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
4/9/2024, 11:28 am	EPL5	Yarrangobilly River, upstream of the exploratory tunnel and construction pad	12.33	170.7	18.24	156	102	8.25	124	11.8	Sunny day , Clear water, Plenty of flow	This location is upstream of works and is therefore representative of background conditions.
4/9/2024, 12:05 pm	EPL6	Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence	9.65	120.6	13.71	55	36	8.03	140	4.9	Sunny day , Clear water, Plenty of flow	Elevated pH and DO levels remain consistent with baseline conditions. During the baseline studies in the spring season, pH and Dissolved oxygen displayed frequent exceedances in the Yarrangobilly River. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
4/9/2024, 1:57 pm	EPL8	Yarrangobilly River, downstream of Lick Hole Gully	13.67	116.9	12.12	93	60	7.99	156	8.7	Sunny day , Clear water, Plenty of flow	Elevated DO readings during the September reporting period can be attributed to the increased flow velocity of the water courses associated with US slope snow melt.
4/9/2024, 2:30 pm	EPL9	Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir	12.98	205	21.6	76	50	8.02	157	8.5	Sunny day, Clear water, Slow flow	During the baseline studies in the spring season, pH and Dissolved oxygen displayed frequent exceedances in the Yarrangobilly River. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
4/9/2024, 11:48 am	EPL12	Yarrangobilly River, immediately downstream of portal pad	11.48	106.1	11.56	81	53	8.2	133	11	Sunny day, Clear water, Plenty of flow	Elevated pH levels remain consistent with baseline conditions, and historical data from spring monitoring periods indicate frequent exceedances of project water quality objectives (WQO).
4/9/2024, 12:28 pm	EPL14	Yarrangobilly River, downstream of road construction areas	11.97	176.4	19.01	74	48	8.0	150	6.3	Sunny day, Clear water, Plenty of flow	Elevated DO readings during the September reporting period can be attributed to the increased flow velocity of the water courses at Yarrangobilly River in September.
4/9/2024, 12:38 pm	EPL15	Yarrangobilly River, downstream of road construction areas	11.29	114.9	12.58	79	52	8.05	149	0	Sunny day, Clear water, Slight flow	Elevated pH and DO levels remain consistent with baseline conditions. During the baseline studies in the spring season, pH and Dissolved oxygen displayed frequent exceedances in the Yarrangobilly River. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
4/9/2024, 2:44 pm	EPL16	Yarrangobilly River, downstream of road construction areas	12.55	177.8	18.91	76	49	8.01	158	1.3	Sunny day, Clear water, Plenty of flow	Elevated pH and DO levels remain consistent with baseline conditions. During the baseline studies in the spring season, pH and Dissolved oxygen displayed frequent exceedances in the Yarrangobilly River. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
6/9/2024, 3:20 pm	EPL24	Yarrangobilly River tributary (Watercourse 2), directly downstream of road	16	74	7.3	386	251	7.28	146	11.6	Very clear, no odour, Sunny, hot, minimal wind today.	Low DO and elevated EC concentrations align with historical data for EPL 24.
7/9/2024, 12:16 pm	EPL26	Eucumbene River downstream of Marica Road	11.8	92.1	9.96	37	24	7.81	-68	5.8	Cloudy, Rain in the morning, Clear water, Plenty of flow	All readings are within WQO limits.
7/9/2024, 12:08 pm	EPL27	Eucumbene River upstream of Marica Road	12.2	91.3	9.79	64	42	7.94	109	3.4	Sunny, Rain in the morning, Clear water, Plenty of flow, Duplicate & Triplicate sample	All readings are within WQO limits.
13/9/2024, 9:59 am	EPL30	Kellys Plain Creek, downstream of accommodation camp and laydown areas	8.95	131.7	15.24	36	23	8.5	97	12	Sunny, Plenty of creek flow, Clear water	Elevated DO and pH readings during the September reporting period can be attributed to the increased flow velocity of the water courses in September.
13/9/2024, 10:22 am	EPL31	Kellys Plain Creek, upstream of accommodation camp and laydown areas	8.94	100.9	11.67	24	16	7.88	114	16.7	Sunny, Plenty of creek flow, Clear water	Low electrical conductivity (EC) is consistent with historical data and conditions for this location for September.
13/9/2024, 10:59 am	EPL33	Murrumbidgee River, downstream of Tantangara reservoir outlet	11.28	92	10.08	23	15	7.51	130	13.5	Sunny, Clear water , Depth about 0.2m	Low electrical conductivity (EC) is consistent with historical data and conditions for this location for September.
13/9/2024, 11:40 am	EPL34	Nungar Creek, upstream of Tantangara Road	9.34	97.1	11.18	15	10	7.78	104	2.1	Sunny, Plenty of flow, Clear water	Low electrical conductivity (EC) is consistent with historical data and conditions for this location for September.
13/9/2024, 11:27 am	EPL35	Nungar Creek, downstream of Tantangara Road	11.87	97.3	10.51	15	10	7.88	112	5.1	Sunny, Plenty of flow, Clear water	Low electrical conductivity (EC) is consistent with historical data and conditions for this location for September.
21/9/2024, 10:35 am	EPL36	Camerons Creek, upstream of works in Rock Forest	8.08	57.4	6.78	36	24	5.84	182	28.6	Clear water. Cold windy day. Decomposing vegetation around stream line. No odour.	This location is upstream of works and is therefore representative of background conditions.
21/9/2024, 10:01 am	EPL37	Camerons Creek, downstream of works in Rock Forest	7.84	71.8	8.55	33	21	6.59	145	42.1	Recent rain, cold and windy conditions. Water quite clear. No odour.	Low DO and high turbidity are within the historical range for this location and are consistent with background conditions for September 2024.
3/9/2024, 12:45 pm	EPL52	GF01 sediment basin	15.57	111.9	11.11	939	601	8.56	71	12.7	Sunny day, Clear water, Duplicate & Triplicate	High EC, pH, and turbidity are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant .
-	EPL53	GF01 surface water upstream east	-	-	-	-	-	-	-	-	-	Dry site, no flow
-	EPL54	GF01 surface water upstream west	-	-	-	-	-	-	-	-	-	Dry site, no flow
3/9/2024, 1:03 pm	EPL55	GF01 surface water downstream	12.8	106.1	11.2	752	481	7.06	-26	0.00	Sunny day, algal growth, limited water	Elevated EC is generally consistent with historical data and conditions at GF01 during sampling in September 2024.
21/9/2024, 11:41 am	EPL 66	Tantangara Leachate basin downstream east from Tantangara emplacement area	8.7	66.1	7.7	0	0	8.13	204	11.40	Sunny, heavy rain occurring overnight and early morning; warmer temps than normal. Water relatively clear; organic material present; no distinct odour. Due to severely low water level in reservoir, insitu conducted approximately 20m away from location point.	Low electrical conductivity (EC) is consistent with historical data and conditions for this location in September.
22/9/2024, 9:05 am	EPL67	Nungar Creek surface water downstream west from Tantangara emplacement area	10.02	67	7.56	14	9	8.06	156	10.90	Overcast; mild wind. Water clear with organic material present; no odour or oily sheen. Sample taken from original established Nungar creek that was present due to significantly low reservoir level.	Low electrical conductivity (EC) is consistent with historical data and conditions for this location in September.
21/9/2024, 9:13 am	EPL71	Surface water downstream of Marica emplacement	6.22	257.6	31.87	185	120	6.87	254	15	Overcast, mild wind. Water slightly turbid with organic material present; no odour or oily sheen. Sample was taken at the deepest part of this shallow creek	Elevated DO is within the historical baseline water quality result during wet season conditions at Marica.
5/9/2024, 9:33 am	EPL84	F8 Basin	10.76	92.9	10.26	1030	662	8.39	146	1000	Cloudy, Turbidity > 1000 NTU, Depth 50%	High EC, pH, and turbidity are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant.
5/9/2024, 9:50 am	EPL85	MY07 Basin	10.92	103.9	11.46	483	314	10.07	107	90.1	Sunny, Clear water, No odour, Mid depth	High EC, pH and turbidity are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant.
5/9/2024, 10:47 am	EPL86	LHG01 Basin	15.85	88.4	8.72	1170	748	7.78	-26	55.5	Sunny, Clear water, Depth low, No odour	High EC and turbidity with low DO are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant.

Table 2 - Reservoir Water Quality Data
Talbingo and Tantangara Reservoirs

	Water Quality Objectives (see note 2)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	90 - 110	-	20 - 30	-	6.5 - 8.0	-	1 - 20

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
8/9/2024, 8:42 am	EPL10	Talbingo Reservoir, downstream of road works and upstream of water intake point	13.07	99.6	10.48	80	52	6.83	-14	3.7	Clear no odour, no algal growth visible	High EC remains consistent with baseline conditions. EC displayed frequent exceedances during the September season. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
8/9/2024, 8:28 am	EPL11	Talbingo Reservoir, downstream of outlet	13.27	99.1	10.38	75	49	6.96	-21	3.8	Clear no odours, no algal growth visible	High EC remains consistent with baseline conditions. EC displayed frequent exceedances during the September season. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
24/9/2024, 9:12 am	EPL28	Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River	8.71	83.4	9.71	18	12	7.42	126	236	Sunny, no wind. Water green/grey colour with organic material present; no odour or oily sheen.	This location is upstream of works and is therefore representative of background conditions.
24/9/2024, 10:06 am	EPL29	Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River	9.49	87	9.94	17	11	6.94	205	3.8	Sunny, slight wind. Water green/grey colour with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) is consistent with historical data and conditions for this location for September.
24/9/2024, 9:58 am	EPL32	Tantangara Reservoir, Tantangara Intake. Downstream of construction works	9.41	81.8	9.36	16	10	7.73	158	3.9	Sunny, no wind. Water green/grey colour with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) and DO are consistent with historical data and conditions for this location for September.
24/9/2024, 9:38 am	EPL38	Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities	9.12	80.8	9.32	16	11	6.99	170	5	Sunny, no wind. Water green/grey colour with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) and DO are consistent with historical data and conditions for this location for September.
22/9/2024, 8:53 am	EPL39	Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works	9.25	89	10.23	19	12	8.63	136	10.7	Overcast; mild wind. Water clear with organic material present; no odour or oily sheen. Sample taken from original established Nungar creek that was present due to significantly low reservoir level.	This location is upstream of works and is therefore representative of background conditions. Elevated pH and low DO can be attributed to the decreased level of water and the presence of organic material.
24/9/2024, 9:14 am	EPL40	Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works	8.5	79.8	9.33	18	12	7.07	84	51.4	Sunny, no wind. Water green/grey colour with organic material present; no odour or oily sheen.	This location is upstream of works and is therefore representative of background conditions.
24/9/2024, 10:24 am	EPL 46	Tantangara Reservoir, diffuser outlet discharging into Tantangara Reservoir from Tantangara STP/PWTP	9.42	80.2	9.18	17	11	6.77	211	3.8	Sunny, slight wind. Water green/grey colour with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) and DO are consistent with historical data and conditions for this location for September.
24/9/2024, 10:16 am	EPL 51	Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet	9.41	80.7	9.24	17	11	7.54	173	3.8	Sunny, slight wind. Water green/grey colour with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) and DO are consistent with historical data and conditions for this location for September.

Table 3 - Treated Water Quality Data
Talbingo

	Water Quality Objectives (see note 3)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	-	-	700	-	6.5 - 8.0	-	25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
4/9/2024, 8:33 am	EPL41	Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir.	11.38	52.2	5.69	315	205	7.45	105	25.8	Clear water RO startup sample after 5 mins	No dicharge occurred at this time.

Table 4 - Treated Water Quality Data
Tantangara

	Water Quality Objectives (see note 3)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	-	-	200	-	6.5 - 8.0	-	25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
29/9/2024, 12:28 pm	EPL50	Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir.	14.2	67.2	6.88	222	181.6	5.69	35.1	2.5	RO plant has not been running due to installation of additional parts. Clear, running water with no odour	The pH and EC levels will continue to be monitored in the coming sampling rounds.

Table 5 - Groundwater Quality Data
GF01 Surface Water and Groundwater

Water Quality Objectives (see note 1)								
Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	
-	-	-	30 - 350	-	6.5 - 8.0	-	-	

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
3/9/2024, 11:36 am	EPL56	GF01 groundwater upstream east	11.25	111.5	12.19	503	322	5.65	197	23.4	SWL 10.49m, Clear water, Hydrsleeve with collar, No oil visible	This location is upstream of works and is therefore representative of background conditions.
3/9/2024, 11:49 am	EPL57	GF01 groundwater upstream west	13.22	110.3	11.56	237	154	4.82	209	328	SWL 15.96m, Sunny day , Clear water, No oil visible, Hydrasleeve	This location is upstream of works and is therefore representative of background conditions.Low pH is generally consistent with surrounding conditions.
3/9/2024, 12:57 pm	EPL58	GF01 groundwater downstream	15.79	95.5	9.46	819	513	7.87	104	79.5	Sunny day, Clear water, Footvalve	High EC is generally consistent with conditions at GF01 during sampling.
7/9/2024, 11:25 am	EPL68	Tantangara groundwater downstream West	13.2	92.1	9.65	27.7	23	5.74	182.1	4.88	Sunny, heavy rain occurring overnight and early morning; warmer temps than normal. Clear water, no odour.	Low pH and EC are generally consistent with previous results in the last months. These conditions are following expected changes due to altered climatic conditions.
21/9/2024, 11:09 am	EPL69	Tantangara groundwater downstream East	10.9	83.6	9.25	18.6	17	5.82	165.1	5.57	Sunny, heavy rain occurring overnight and early morning; warmer temps than normal. Water clear; no odour.	Low pH and EC are generally consistent with previous results in the last months. These conditions are following expected changes due to altered climatic conditions.
7/9/2024, 2:46 pm	EPL70	Tantangara groundwater upstream	13.9	66.7	6.89	112.7	93	6.1	195.9	15.53	Sunny, heavy rain occurring overnight and early morning; warmer temps than normal. Water clear with sediment stirred up at bottom of sleeve; no odour.	This location is upstream of works and is therefore representative of background conditions.
7/9/2024, 10:54 am	EPL 72	Marica groundwater upstream	11.64	47.1	5.12	54	35	6.11	136	108	Clear sunny day, Non turbid water. Bore had minimal water, dry, SWL 26.0 m	This location is upgradient of works and is therefore representative of background conditions.
7/9/2024, 9:05 am	EPL73	Marica groundwater downstream	11.92	88.9	9.56	560	358	8.09	140	760	SWL 16.5m, Foggy Rainy day, Slightly discoloured water, Hydrasleeve in	Elevated pH and EC are generally consistent with the previous results for this location and the exceedance is consistent with the historical data.
5/9/2024, 11:21 am	EPL80	LHG groundwater upstream	18.31	33.4	3.13	812	520	6.88	-23	50.9	SWL 20.35m, Sunny, Slightly turbid, Hydrasleeve in	This location is upstream of works and is therefore representative of background conditions.
5/9/2024, 10:33 am	EPL81	LHG groundwater downstream	15.27	54.8	5.48	696	445	7.04	-85	309	SWL 3.25m, Sunny, Turbid water with lot of silt and floating debris, Concrete pad under construction, Hydrasleeve in	Elevated EC is generally consistent with the previous results for this location and the exceedance is consistent with the historical data.
5/9/2024, 11:34 am	EPL82	MY groundwater upstream	18.38	69.1	6.44	2670	1710	7.14	-16	181	SWL 8.2m, Sunny, Turbid water, Footvalve in	This location is upstream of works and is therefore representative of background conditions and within historical ranges.
5/9/2024, 10:24 am	EPL83	MY groundwater downstream	13.53	89	9.25	649	415	7.65	2	790	SWL 3.1m, Sunny day, Turbid water, Concrete pad under construction, Footvalve in	Elevated EC is generally consistent with background conditions in September 2024 and previous conditions recorded in this location.
5/9/2024, 9:20 am	EPL87	MY groundwater downstream	10.91	66	7.28	517	331	7.02	148	1000	SWL 3.54m, Cloudy, Very turbid water, Foot valve in, Turbidity > 1000 NTU	Low pH is generally consistent with surrounding conditions in September 2024.
5/9/2024, 10:11 am	EPL88	MY groundwater downstream	13.17	29.9	3.13	842	539	7.18	-27	1.3	SWL 2.95m, Sunny day, Very clear water, Hydrasleeve, dust supression run off batter	Elevated EC is generally consistent with background conditions in September 2024 and previous conditions recorded in the last sampling rounds.
5/9/2024, 11:06 am	EPL89	LHG groundwater downstream	14.97	66.9	6.74	323	210	7.74	42	106	SWL 2.82m, Sunny, Slightly turbid, Construction work Upstream, Hydrasleeve in	All readings are within WQO limits.
2/9/2024, 3:32 pm	EPL90	GF01 groundwater downstream	13.11	49.5	5.2	186	121	5.39	66	1000	SWL 13.03, Turbidity > 100 NTU, No odour	Low pH is generally consistent with surrounding conditions and previous results recorded.
2/9/2024, 2:51 pm	EPL91	GF01 groundwater downstream	14.41	26.2	2.67	262	170	6.67	51	39.3	SWL 8.22mbtoc, Clear, no odours	All readings are within WQO limits.
3/9/2024, 12:09 pm	EPL92	GF01 groundwater downstream	14.67	76.5	7.78	193	125	6.64	199	1000	SWL 14.88m, Sunny day, Turbid water over 1000 NTU, Foot valve in	All readings are within WQO limits.
3/9/2024, 12:19 pm	EPL93	GF01 groundwater downstream	14.47	105.7	10.78	295	192	6.94	-74	436	SWL 14.53m, Sunny day, Turbid water	All readings are within WQO limits.
3/9/2024, 12:26 pm	EPL94	GF01 groundwater downstream	14.6	100.1	10.17	202	131	7.13	-39	135	SWL 13.76m, Sunny day, Turbid water, Foot valve in	All readings are within WQO limits.
2/9/2024, 3:19 pm	EPL95	GF01 groundwater downstream	14.37	64.7	6.6	560	359	5.88	39	225	Swl 6.81mbtoc, No odour	Low pH and elevated conductivity are generally consistent with surrounding conditions and previous results recorded.
2/9/2024, 3:06 pm	EPL96	GF01 groundwater downstream	13.87	35.9	3.7	457	297	6.83	92	759	Swl 4.91mbtocDtb 12.21	Slightly elevated EC is generally consistent with surrounding conditions.
2/9/2024, 2:42 pm	EPL97	GF01 groundwater downstream	14.07	71.8	7.38	481	313	6.54	133	85.4	Swl 6.14mbtoc, Clean, no odour	Slighlty elevated EC is generally consistent with surrounding conditions.

Note 1: Water Quality Objective values for the Yarrangobilly River and Minor Watercourses refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) that are reported in Tables 3.3.2 and 3.3.3 of ANZECC/ ARMCANZ (2000).

Note 2: Water Quality Objective values for Talbingo Reservoir are the default trigger values for physical and chemical stressors in south-east Australia (freshwater lakes and reservoirs) that are reported in Tables 3.3.2 and 3.3.3 of ANZECC/ ARMCANZ (2000).

Note 3: Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

Note 4: Water Quality Objective values for groundwater reference the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for pH and electrical conductivity.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01-30 September 2024 Groundwater

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPLS6	EPLS7	EPLS8	EPL68	EPL69	EPL70	EPL72	EPL73	EPL80	EPL81	EPL82	EPL83	EPL87	EPL88	EPL89	EPL 90	EPL 91	EPL92	EPL93	EPL94	EPL95	EPL96	EPL97
Physiochemical				3/09/2024	3/09/2024	3/09/2024	07/09/2024	21/09/2024	07/09/2024	07/09/2024	07/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024	5/09/2024	2/09/2024	2/09/2024	3/09/2024	3/09/2024	3/09/2024	2/09/2024	2/09/2024	2/09/2024
pH	pH Unit	-	6.5-8	5.65	4.82	7.87	5.74	5.82	6.1	6.11	8.09	6.88	7.04	7.14	7.65	7.02	7.18	7.74	5.39	6.67	6.64	6.94	7.13	5.88	6.83	6.54
Electrical Conductivity	µS/cm	-	30-350	503	237	819	27.7	18.6	112.7	54	560	812	696	2670	649	517	842	323	186	262	193	295	202	560	457	481
Oxidation Reduction Potential	mV	-	No Water Quality Objective Value	197	209	104	182.1	165.1	195.9	136	140	-23	-85	-16	2	148	-27	42	66	51	199	-74	-39	39	92	133
Temperature	°C	-	No Water Quality Objective Value	11.25	13.22	15.79	13.2	10.9	13.9	11.64	11.92	18.31	15.27	18.38	13.53	10.91	13.17	14.97	13.11	14.41	14.67	14.47	14.6	14.37	13.87	14.07
Dissolved Oxygen	% saturation	-	No Water Quality Objective Value	111.5	110.3	95.5	92.1	83.6	66.7	47.1	88.9	33.4	54.8	69.1	89	66	29.9	66.9	49.5	26.2	76.5	105.7	100.1	64.7	35.9	71.8
Turbidity	NTU	-	No Water Quality Objective Value	23.4	328	79.5	4.88	5.57	15.53	108	760	50.9	309	181	790	1000	1.3	106	1000	39.3	1000	436	135	225	759	85.4
Laboratory analytes																										
TSS	mg/L	5	No Water Quality Objective Value	45	206	109	22	11	48	68	378	13	460	841	568	2,110	20	50	1,820	34	2,510	1,500	195	372	903	106
Hardness as CaCO3	mg/L	1	No Water Quality Objective Value	136	121	261	2	<1	26	13	22	354	362	1,270	110	78	124	56	26	126	66	135	83	156	154	146
Nutrients																										
Ammonia as N	µg/L	10	13	<10	30	<10	<10	20	10	<10	<10	30	50	100	<10	20	200	<10	<10	<10	10	70	20	<10	<10	10
Nitrite + Nitrate as N (Nox)	µg/L	10	15	<10	490	50,000	1,440	470	360	290	2,430	<10	<10	<10	5,500	3,430	<10	200	1,320	60	30	<10	10	26,000	12,200	430
Kjeldahl Nitrogen Total	µg/L	100	No Water Quality Objective Value	<100	200	1,100	500	200	200	100	100	200	200	400	1,200	2,800	400	100	<1,000	<100	<1,000	200	300	1,700	1,700	100
Nitrogen (Total)	µg/L	100	250	<100	700	51,100	1,900	700	600	400	2,500	200	200	400	6,700	6,200	400	300	1,300	<100	<1,000	200	300	27,700	13,900	500
Reactive Phosphorus	µg/L	1	15	3	4	3	<1	2	14	19	20	6	4	4	7	7	11	8	14	9	7	34	2	5	4	4
Phosphorus (Total)	µg/L	10	20	40	310	120	20	40	80	70	70	50	340	70	500	1,330	60	50	1,420	70	640	370	100	270	690	80
Inorganics																										
Cyanide Total	µg/L	4	4	10	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons																										
Oil and Grease	mg/L	1	5	<4.0	<2.0	<1.0	<1.0	<1	<1.0	<6.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals																										
Aluminium (dissolved)	µg/L	5	27	<5	<5	<5	<5	8	<5	10	<5	<5	<5	<5	<5	<5	6	<5	<5	<5	<5	<5	<5	<5	<5	<5
Aluminium (total)	µg/L	5	No Water Quality Objective Value	835	5,910	2,090	732	667	3,400	201	727	10	4,450	3,220	12,000	64,800	211	899	30,500	444	20,200	24,900	3,380	5,720	15,700	1,450
Arsenic (dissolved)	µg/L	0.2	0.8	<0.2	1.4	0.2	<0.2	<0.2	<0.2	0.2	<0.2	2.4	1.2	0.4	2.5	0.2	0.3	<0.2	<0.2	0.3	0.5	18.8	0.8	1.3	<0.2	0.4
Arsenic (total)	µg/L	0.2	No Water Quality Objective Value	0.5	4.0	2.6	<0.2	0.2	0.5	0.3	<0.2	20.5	294	57.4	44.4	18.1	33.1	0.6	14.7	2.7	16.8	55.1	13.2	16.4	19.5	4.9
Chromium (III+VI) (dissolved)	µg/L	0.2	0.01	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.3	<0.2	<0.2	<0.2	24.5	1.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2
Chromium (III+VI) (total)	µg/L	0.2	No Water Quality Objective Value	3.2	13.2	6.8	1.7	0.7	5.5	0.9	0.7	0.2	10.3	6.3	64.3	191	2.7	1.7	82.1	1.2	29.0	66.3	10.3	13.8	45.9	4.6
Copper (dissolved)	µg/L	0.5	1	6.3	3.9	0.6	4.5	<0.5	53.4	2.4	<0.5	<0.5	<0.5	<0.5	2.4	0.7	<0.5	38.4	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5
Copper (total)	µg/L	0.5	No Water Quality Objective Value	71.1	438	4.5	9.2	1.3	124	4.9	1.7	<0.5	15.4	3.8	44.4	143	14.3	98.2	87.4	0.6	47.9	43.7	6.2	31.9	47.6	2.4
Iron (dissolved)	µg/L	2	300	145	<2	<2	<2	7	<2	2	<2	<2	<2	66	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iron (total)	µg/L	2	No Water Quality Objective Value	1,430	6,660	3,340	335	344	2,390	144	222	891	23,800	8,500	18,400	95,200	1,040	820	47,000	990	18,900	38,800	7,540	8,090	38,000	3,070
Lead (dissolved)	µg/L	0.1	1	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1
Lead (total)	µg/L	0.1	No Water Quality Objective Value	7.1	20.5	37.0	0.3	0.3	2.7	0.6	0.9	<0.1	13.4	10.3	23.3	143	1.6	0.6	180	2.7	964	140	18.4	48.4	316	43.4
Manganese (dissolved)	µg/L	0.5	1,200	35.2	26.2	263	3.1	<0.5	3.4	9.4	9.9	186	190	330	8.3	35.0	9.7	11.4	23.3	248	250	291	593	344	6.5	546
Manganese (total)	µg/L	0.5	No Water Quality Objective Value	89.1	550	352	15.5	7.4	80.2	12.2	15.2	216	257	422	518	2,060	251	22.7	2,040	314	1,360	1,270	834	850	2,960	735
Nickel (dissolved)	µg/L	0.5	8	<0.5	<0.5	4.7	1.5	<0.5	2.2	1.7	<0.5	18.4	1.8	7.2	3.8	1.2	<0.5	2.7	4.4	<0.5	3.4	2.7	1.7	11.2	1.9	3.8
Nickel (total)	µg/L	0.5	No Water Quality Objective Value	3.9	22.7	12.0	2.7	0.6	7.1	2.4	0.6	22.2	19.9	15.1	55.8	287	8.2	4.7	177	1.9	51.8	116	16.3	32.2	94.9	11.2
Silver (dissolved)	µg/L	0.01	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver (total)	µg/L	0.01	No Water Quality Objective Value	0.06	0.05	0.10	-	-	-	0.08	<0.01	<0.01	0.06	0.01	0.08	0.29	<0.01	<0.01	0.29	<0.01	0.54	0.26	0.03	0.10	0.40	0.03
Zinc (dissolved)	µg/L	1	2.4	2	<1	12	4	<1	2	12	<1	2	<1	9	3	<1	<1	2	22	2	7	<1	3	26	1	37
Zinc (total)	µg/L	1	No Water Quality Objective Value	22	48	29	6	3	10	14	2	5	43	68	100	565	12	5	487	10	313	341	172	91	254	186

* Water Quality Objective values for groundwater refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for the protection of 99% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

. Sample not received due to laboratory error.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01-30 September 2024 - Talbingo and Tantangara Reservoir

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL10	EPL11	EPL28	EPL29	EPL32	EPL38	EPL39	EPL40	EPL46	EPL50
Field				8/9/24	8/9/24	24/9/24	24/9/24	22/9/24	24/9/24	24/9/24	24/9/24	24/9/24	29/9/24
pH	**pH Unit**	-	6.5-8	6.83	6.96	7.42	6.94	7.73	6.99	8.63	7.07	6.77	7.54
Electrical Conductivity	**µS/cm**	-	20-30	80	75	18	17	16	16	19	18	17	17
Oxidation Reduction Potential	**mV**	-	No Water Quality Objective Value	-14	-21	126	205	158	170	136	84	211	173
Temperature	**°C**	-	No Water Quality Objective Value	13.07	13.27	8.71	9.49	9.41	9.12	9.25	8.5	9.42	9.41
Dissolved Oxygen	**% saturation**	-	90-110	99.6	99.1	83.4	87	81.8	80.8	89	79.8	80.2	80.7
Turbidity	**NTU**	-	1-20	3.7	3.8	236	3.8	3.9	5	10.7	51.4	3.8	3.8
Laboratory analytes													
Total suspended solids	**mg/L**	5	No Water Quality Objective Value	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Hardness as $CaCO_3$ (filtered)	**mg/L**	1	No Water Quality Objective Value	36	33	5	2	2	2	<1	9	2	<1
Nutrients													
Ammonia as N	**µg/L**	10	10	<10	80	40	20	50	20	40	80	20	30
Nitrite + Nitrate as N (NOx)	**µg/L**	10	10	20	30	<10	10	20	10	10	<10	20	20
Kjeldahl Nitrogen Total	**µg/L**	100	No Water Quality Objective Value	100	100	200	200	200	200	100	200	200	200
Nitrogen (Total)	**µg/L**	100	350	100	100	200	200	200	200	100	200	200	200
Reactive Phosphorus	**µg/L**	1	5	5	3	2	2	2	2	<1	2	2	2
Phosphorus (Total)	**µg/L**	10	10	<10	<10	30	30	30	40	<10	20	30	60
Inorganics													
Cyanide Total	**µg/L**	4	7	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons													
Oil and Grease	**mg/L**	1	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals													
Aluminium (dissolved)	**µg/L**	5	55	7	8	10	15	14	14	13	20	15	<5
Arsenic (dissolved)	**µg/L**	0.2	13	0.3	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium (III+VI) (dissolved)	**µg/L**	0.2	1	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper (dissolved)	**µg/L**	0.5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iron (dissolved)	**µg/L**	2	300	17	16	53	56	57	67	32	102	55	2
Lead (dissolved)	**µg/L**	0.1	3.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Manganese (dissolved)	**µg/L**	0.5	1,900	13.1	9.3	50.7	0.9	0.9	1.0	2.9	52.0	0.9	3.7
Nickel (dissolved)	**µg/L**	0.5	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver (dissolved)	**µg/L**	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (dissolved)	**µg/L**	1	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Biological													
Faecal Coliforms	**CFU/100mL**	1	10/100^	10	2	<1	-	-	-	-	-	-	<1
Biological Oxygen Demand	**mg/L**	2	1/5^	5	5	2	-	-	-	-	-	-	<2

* Water Quality Objective values for Talbingo and Tantangara Reservoir refer to the default trigger values for physical and chemical stressors in south-east Australia (fresh lakes and reservoirs) for the protection of 95% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

^ 90th percentile concentration limits / 100 percentile concentration limits

\- Sample not required at this location.

** Algal blooms can present as feacal coliforms - green tinge noted in Talbingo Resevroir water at time of sampling.

Snowy Hydro 2.0 Main Works
Monthly EPL Sampling: 01 - 30 September 2024 - Surface Water

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL5	EPL6	EPL8	EPL9	EPL12	EPL14	EPL15	EPL16	EPL24	EPL26	EPL27	EPL30	EPL31	EPL33	EPL34	EPL35	EPL36	EPL37	EPL52	EPL53	EPL54	EPL55	EPL66	EPL67	EPL71	EPL84	EPL85	EPL86
Field				4/09/24	4/09/24	4/09/24	4/09/24	4/09/24	4/09/24	4/09/24	4/09/24	6/09/24	7/09/24	7/09/24	13/09/24	13/09/24	13/09/24	13/09/24	13/09/24	21/09/24	21/09/24	3/09/24			3/09/24	21/09/24	22/09/24	21/09/24	5/09/24	5/09/24	5/09/24
pH	-	-	6.5-8	8.25	8.03	7.99	8.02	8.2	8	8.05	8.01	7.28	7.81	7.94	8.5	7.88	7.51	7.78	7.88	5.84	6.59	8.56	Dry	Dry	7.06	8.13	8.07	6.87	8.39	10.07	7.78
Electrical Conductivity	µS/cm	-	30-350	156	55	93	76	81	74	79	76	386	37	64	36	24	23	15	15	36	33	939	Dry	Dry	752	0	14	185	1030	483	1170
Oxidation Reduction Potential	mV	-	No Water Quality Objective Value	124	140	156	157	133	150	149	158	146	68	109	97	114	130	104	112	182	145	71	Dry	Dry	-26	204	156	254	146	107	-26
Temperature	°C	-	No Water Quality Objective Value	12.33	9.65	13.67	12.98	11.48	11.97	11.29	12.55	16	11.8	12.2	8.95	8.94	11.28	9.34	11.87	8.08	7.84	15.57	Dry	Dry	12.8	8.7	10.02	6.22	10.76	10.92	15.85
Dissolved Oxygen	% saturation	-	90-110	170.7	120.6	116.9	205	106.1	176.4	114.9	177.8	74	92.1	91.3	131.7	100.9	92	97.1	97.3	57.4	71.8	111.9	Dry	Dry	106.1	66.1	67	257.6	92.9	103.9	88.4
Turbidity	NTU	-	2-25	11.8	4.9	8.7	8.5	11	6.3	0	1.3	11.6	5.8	3.4	12	16.7	13.5	2.1	5.1	28.6	42.1	12.7	Dry	Dry	0	11.4	10.9	15	1000	90.1	55.5
Laboratory analytes																															
TSS	mg/L	5	No Water Quality Objective Value	<5	<5	<5	7	<5	<5	<5	6	<5	<5	<5	5	5	5	<5	<5	<5	<5	6	Dry	Dry	<5	28	<5	<5	469	34	19
Hardness as CaCO3	mg/L	1	No Water Quality Objective Value	36	23	38	33	36	33	33	36	93	9	9	2	7	<1	2	<1	11	13	230	Dry	Dry	183	<1	<1	54	64	38	311
Nutrients																															
Ammonia as N	µg/L	10	13	<10	<10	<10	30	<10	<10	<10	30	<10	<10	<10	30	<10	10	90	80	10	<10	10	Dry	Dry	<10	80	50	60	600	110	<10
Nitrite + Nitrate as N (NOx)	µg/L	10	15	10	<10	40	10	<10	<10	<10	<10	14,900	<10	<10	<10	<10	<10	20	<10	20	20	34,700	Dry	Dry	24,200	140	<10	110	5,860	4,240	20,900
Kjeldahl Nitrogen Total	µg/L	100	No Water Quality Objective Value	100	<100	100	<100	100	100	<100	100	200	300	300	100	<100	200	300	200	500	500	3,700	Dry	Dry	1,800	400	<100	<100	2,400	900	2,300
Nitrogen (Total)	µg/L	100	250	100	<100	100	<100	100	100	<100	100	15,100	300	300	100	<100	200	300	200	500	500	38,400	Dry	Dry	26,000	500	<100	100	8,300	5,100	23,200
Reactive Phosphorus	µg/L	1	15	3	8	4	5	3	4	4	4	5	1	1	2	3	<1	2	<1	2	88	<1	Dry	Dry	3	2	<1	4	9	<1	7
Phosphorus (Total)	µg/L	10	20	30	40	20	30	30	<10	20	<10	140	20	10	40	40	30	40	50	30	140	40	Dry	Dry	30	60	<10	20	410	50	40
Inorganics																															
Cyanide Total	µg/L	4	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	Dry	Dry	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons																															
Oil and Grease	mg/L	1	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Dry	Dry	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals																															
Aluminium (dissolved)	µg/L	5	27	10	<5	8	9	11	9	9	8	<5	16	14	12	12	16	19	16	62	81	<5	Dry	Dry	<5	17	13	<5	<5	32	<5
Aluminium (total)	µg/L	5	No Water Quality Objective Value	196	93	145	148	184	182	157	176	332	68	62	-	-	-	-	-	-	-	120	Dry	Dry	142	411	196	278	17,300	1,260	999
Arsenic (dissolved)	µg/L	0.2	0.8	0.2	<0.2	0.2	0.2	0.2	0.2	0.3	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	0.5	1.7	Dry	Dry	<0.2	<0.2	<0.2	0.2	<5	2.5	2.4
Arsenic (total)	µg/L	0.2	No Water Quality Objective Value	0.3	<0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	<0.2	<0.2	-	-	-	-	-	-	-	1.7	Dry	Dry	0.2	0.3	<0.2	0.2	10.6	2.8	3.3
Chromium (III+VI) (dissolved)	µg/L	0.2	0.01	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.3	7.2	Dry	Dry	1.4	<0.2	<0.2	<0.2	54.9	90.5	5.2
Chromium (III+VI) (total)	µg/L	0.2	No Water Quality Objective Value	0.5	<0.2	0.4	0.4	0.5	0.5	0.5	0.5	1.0	0.3	2.2	-	-	-	-	-	-	-	7.2	Dry	Dry	1.5	0.6	0.4	0.5	104	87.0	7.2
Copper (dissolved)	µg/L	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	Dry	Dry	<0.5	<0.5	<0.5	<0.5	1.7	0.6	2.1
Copper (total)	µg/L	0.5	No Water Quality Objective Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.7	<0.5	-	-	-	-	-	-	-	0.6	Dry	Dry	0.5	0.6	<0.5	0.6	39.9	2.8	3.9
Iron (dissolved)	µg/L	2	300	16	6	16	14	16	16	14	16	3	26	24	16	20	30	48	32	260	267	<2	Dry	Dry	<2	87	32	4	4	<2	<2
Iron (total)	µg/L	2	No Water Quality Objective Value	132	60	95	96	125	127	101	128	240	78	84	-	-	-	-	-	-	-	89	Dry	Dry	110	628	211	239	26,300	1,640	1,080
Lead (dissolved)	µg/L	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Dry	Dry	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Lead (total)	µg/L	0.1	No Water Quality Objective Value	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.3	<0.1	<0.1	-	-	-	-	-	-	-	0.1	Dry	Dry	0.3	0.3	0.1	<0.1	46.0	2.9	2.5
Manganese (dissolved)	µg/L	0.5	1,200	1.2	1.4	1.4	4.0	1.3	1.4	2.0	2.4	49.8	2.2	1.8	2.2	2.3	4.0	1.0	4.1	20.4	18.3	<0.5	Dry	Dry	3.6	67.0	2.8	10.1	0.9	<0.5	2.1
Manganese (total)	µg/L	0.5	No Water Quality Objective Value	3.4	2.7	2.7	5.6	3.2	4.0	3.3	5.4	61.2	3.1	2.7	-	-	-	-	-	-	-	5.1	Dry	Dry	6.2	123	5.7	11.9	675	41.7	68.8
Nickel (dissolved)	µg/L	0.5	8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	1.0	<0.5	Dry	Dry	<0.5	<0.5	<0.5	1.9	0.9	<0.5	1.0
Nickel (total)	µg/L	0.5	No Water Quality Objective Value	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	-	-	-	-	-	-	-	0.9	Dry	Dry	0.6	<0.5	<0.5	2.2	84.9	5.8	3.2
Silver (dissolved)	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Dry	Dry	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver (total)	µg/L	0.01	No Water Quality Objective Value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	<0.01	Dry	Dry	<0.01	<0.01	<0.01	-	0.06	<0.01	<0.01
Zinc (dissolved)	µg/L	1	2.4	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	1	<1	2	1	1	1	Dry	Dry	<1	<1	<1	<1	<1	<1	<1
Zinc (total)	µg/L	1	No Water Quality Objective Value	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1	-	-	-	-	-	-	-	6	Dry	Dry	2	1	<1	<1	152	8	6

* Water Quality Objective values for surface water refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for the protection of 99% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

- Sample not required at this location.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01 - 30 September 2024 - Treated Water

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL 41	EPL 43	EPL 44	EPL 45	EPL 47	EPL 48	EPL 49	EPL 50
Flow Rate				4/09/2024							29/09/2024
Inflow#	**ML/day**	-	-	-	0.0000	0.0483	0.0135	0.0473	0.0164	0.0384	-
Outflow#	**ML/day**	-	4.32 (EPL 43 / 50)	-	-	-	-	-	-	-	-
Field											
pH	**pH Unit**	-	6.5-8.5	7.45	-	-	-	-	-	-	5.69
Electrical Conductivity	**µS/cm**	-	700 (EPL 41) / 200 (EPL 50)	315	-	-	-	-	-	-	222
Oxidation Reduction Potential	**mV**	-	No Water Quality Objective Value	105	-	-	-	-	-	-	35.1
Temperature	**°C**	-	15	11.38	-	-	-	-	-	-	14.2
Dissolved Oxygen	**% saturation**	-	No Water Quality Objective Value	52.2	-	-	-	-	-	-	67.2
Turbidity	**NTU**	-	<25	25.8	-	-	-	-	-	-	2.5
Laboratory analytes											
Total suspended solids	**mg/L**	5	5/10	<5	-	-	-	-	-	-	<5
Hardness as $CaCO_3$ (filtered)	**mg/L**	1	No Water Quality Objective Value	2	-	-	-	-	-	-	<1
Nutrients											
Ammonia as N	**µg/L**	10	200/2000^	170	-	-	-	-	-	-	1060
Kjeldahl Nitrogen Total	**µg/L**	100	No Water Quality Objective Value	200	-	-	-	-	-	-	2100
Nitrogen (Total)	**µg/L**	100	350/-^	500	-	-	-	-	-	-	5900
Reactive Phosphorus	**µg/L**	1	No Water Quality Objective Value	7	-	-	-	-	-	-	<1
Phosphorus (Total)	**µg/L**	10	100/300^	10	-	-	-	-	-	-	10
Inorganics											
Cyanide Total	**µg/L**	4	No Water Quality Objective Value	<4	-	-	-	-	-	-	11.00
Hydrocarbons											
Oil and Grease	**mg/L**	1	2/5^	<1.0	-	-	-	-	-	-	<1.0
Metals											
Aluminium (dissolved)	**µg/L**	5	55	<5	-	-	-	-	-	-	12
Arsenic (dissolved)	**µg/L**	0.2	13	0.5	-	-	-	-	-	-	0.5
Chromium (III+VI) (dissolved)	**µg/L**	0.2	1	36.8	-	-	-	-	-	-	2.8
Copper (dissolved)	**µg/L**	0.5	14	<0.5	-	-	-	-	-	-	<0.5
Iron (dissolved)	**µg/L**	2	300	<2	-	-	-	-	-	-	<2
Lead (dissolved)	**µg/L**	0.1	3.4	<0.1	-	-	-	-	-	-	<0.1
Manganese (dissolved)	**µg/L**	0.5	1,900	7.1	-	-	-	-	-	-	<0.5
Nickel (dissolved)	**µg/L**	0.5	11	<0.5	-	-	-	-	-	-	<0.5
Silver (dissolved)	**µg/L**	0.01	0.05	<0.01	-	-	-	-	-	-	<0.01
Zinc (dissolved)	**µg/L**	1	8	<1	-	-	-	-	-	-	<1
Biological											
Faecal Coliforms	**CFU/100mL**	1	10/100^	<1	-	-	-	-	-	-	<1
Biological Oxygen Demand	**mg/L**	2	5	<2	-	-	-	-	-	-	<2

Note: Treated water was not being discharged at Talbingo ot Tantangara Reservoirs at the time of EPL sampling.
There is no 100th percentile limit for Nitrogen (Total).

* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

\- Samples not required

^ 90 Percentile concentration limit/100 Percentile limit

\# Inflows to STP and CWTP do not directly correspond to outflow at RO as much of the water is reused on site

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01 - 30 September 2024 - Treated Water

Date	EPL 43 *	EPL 50 ^	EPL 44	EPL 45	EPL 47	EPL 48	EPL 49
	Discharge volume (Megalitres)		Discharge volume (Megalitres)				
1/09/2024	-	-	0.17	0.071	0.12	0.77	0.20
2/09/2024	-	-	0.23	0.071	0.15	0.08	0.08
3/09/2024	-	-	0.16	0.052	0.08	0.07	0.19
4/09/2024	-	-	0.26	0.047	0.16	0.08	0.42
5/09/2024	-	-	0.20	0.059	0.25	0.03	0.19
6/09/2024	-	-	0.20	0.050	0.17	0.07	0.26
7/09/2024	-	-	0.20	0.049	0.17	0.08	0.37
8/09/2024	-	-	0.21	0.046	0.17	0.08	0.44
9/09/2024	-	-	0.32	0.048	0.23	0.08	0.43
10/09/2024	-	-	0.33	0.049	0.08	0.08	0.51
11/09/2024	-	-	0.10	0.055	0.15	0.08	0.46
12/09/2024	-	-	0.21	0.063	0.17	0.09	0.19
13/09/2024	-	-	0.23	0.051	0.18	0.08	0.28
14/09/2024	-	-	0.21	0.045	0.17	0.13	0.25
15/09/2024	-	-	0.32	0.045	0.18	0.04	0.06
16/09/2024	-	-	0.32	0.062	0.19	0.08	0.48
17/09/2024	-	-	0.21	0.048	0.16	0.08	0.76
18/09/2024	-	-	0.21	0.046	0.15	0.08	0.79
19/09/2024	-	-	0.18	0.064	0.21	0.16	0.78
20/09/2024	-	-	0.24	0.069	0.18	0.08	0.71
21/09/2024	-	-	0.29	0.053	0.18	0.07	0.45
22/09/2024	-	-	0.27	0.057	0.14	0.08	0.82
23/09/2024	-	-	0.35	0.051	0.15	0.09	0.36
24/09/2024	-	-	0.26	0.054	0.24	0.08	0.87
25/09/2024	-	-	0.25	0.042	0.19	0.06	0.76
26/09/2024	0.63	-	0.30	0.085	0.21	0.08	0.87
27/09/2024	-	-	0.27	0.055	0.20	0.08	0.49
28/09/2024	-	-	0.44	0.053	0.19	0.09	0.88
29/09/2024	-	-	0.28	0.039	0.24	0.08	0.39
30/09/2024	-	-	0.21	0.048	0.20	0.16	0.40
	-	-	0.17	0.068	0.21	0.09	0.03

Note: The EPL discharge volume limit for EPL 43 and 50 is 4.32 megalitres per day. Compliance with this criteria was met during the reporting month.

* The maximum flow rate capacity for Lobs Hole STP/PWTP during the reporting month was 0.0 ML/day.

^ The maximum flow rate capacity for Tantangara STP/PWTP during the reporting month was 0.0 ML/day

\- Water not discharged on this day

-- Flow meter non-operational. Water volumes are considered to be similar daily flows to those recorded for each respective plant as works progressed at the same rate.

2024 EPL 21266 In Situ Water Quality Measurements
EPL Monthly Monitoring October 2024

Table 1 - Surface Water Quality Data
River and Minor Watercourses

Water Quality Objectives (see note 1)							
Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
-	90 - 110	-	30 - 350	-	6.5 - 8.0	-	2 - 25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
4/10/2024, 10:09 am	EPL5	Yarrangobilly River, upstream of the exploratory tunnel and construction pad	11.26	106.7	11.59	81	53	7.45	189	3.4	Cloudy day, clean water,high flow, turbulent water, no odour	This location is upstream of works and is therefore representative of background conditions.
4/10/2024, 4:15 pm	EPL6	Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence	10.19	95.4	10.73	60	39	6.7	235	7.9	Cloudy day, high flow, high level of water, clear water, no smell	All readings are within WQO limits.
4/10/2024, 11:44 am	EPL8	Yarrangobilly River, downstream of Lick Hole Gully	12.32	89	9.52	93	61	6.65	235	6.2	Cloudy day, high flow, clean water, no odour	All readings except DO is within WQO limits. DO is consistent with baseline data.
4/10/2024, 12:13 pm	EPL9	Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir	12.13	90.8	9.75	82	53	6.69	237	3.7	Cloudy day, high flowing, no odour, clean water, high level of water	All readings are within WQO limits.
4/10/2024, 10:24 am	EPL12	Yarrangobilly River, immediately downstream of portal pad	11.81	96.4	10.43	81	53	6.62	223	3.7	Cloudy day, no odour, clean water, high flowing, a bit turbulent water	All readings are within WQO limits.
4/10/2024, 11:01 am	EPL14	Yarrangobilly River, downstream of road construction areas	6.64	89.8	9.77	78	51	6.64	241	3.5	Cloudy day, no odour, low flow, low level of water, clear water	All readings are within WQO limits. DO is marginally low
4/10/2024, 4:24 pm	EPL15	Yarrangobilly River, downstream of road construction areas	12.02	91.8	9.88	77	50	6.7	236	3.8	Cloudy day, high flowing, no odour, clear water	All readings are within WQO limits.
4/10/2024, 12:25 pm	EPL16	Yarrangobilly River, downstream of road construction areas	12.66	80.1	8.5	88	57	6.58	240	10.4	Cloudy day, turbulent water, high flowing, no odour, clear water	All readings except DO is within WQO limits. DO is consistent with baseline data.
1/10/2024, 4:23 pm	EPL24	Yarrangobilly River tributary (Watercourse 2), directly downstream of road	17.73	70.9	6.74	301	196	7.18	170	23.4	Sunny, Clear water, Plenty of flow	All readings except DO is within WQO limits. DO is consistent with baseline data.
6/10/2024, 8:53 am	EPL26	Eucumbene River downstream of Marica Road	11.86	107.5	11.62	63	41	7.11	163	19.2	Rainy day, clear water, no odour, slow flow	All readings are within WQO limits.
6/10/2024, 8:58 am	EPL27	Eucumbene River upstream of Marica Road	9.95	96	10.84	33	22	7.9	134	5.8	Rainy day, clear water, no odour, slow flow	All readings are within WQO limits.
5/10/2024, 10:17 am	EPL30	Kellys Plain Creek, downstream of accommodation camp and laydown areas	11.22	71.2	7.81	29	19	6.4	187	10.1	Cloudy day, clear water, slow flow, no odour	Do and pH levels are consistent with baseline data.
5/10/2024, 10:26 am	EPL31	Kellys Plain Creek, upstream of accommodation camp and laydown areas	11.21	71.2	7.81	24	16	6.42	185	7.1	Cloudy day, low level of water, slow flowing, clear water, no odour	Do and pH levels are consistent with baseline data.
5/10/2024, 9:54 am	EPL33	Murrumbidgee River, downstream of Tantangara reservoir outlet	12.6	84.7	9.01	22	14	6.68	157	6.3	Cloudy day, high flowing, clear water, no odour	Low DO levels are consitent with baseline data.
5/10/2024, 9:21 am	EPL34	Nungar Creek, upstream of Tantangara Road	12.14	86.3	9.26	99	64	6.57	94	20.5	Cloudy day, turbulent water, a bit turdid,high flow, no odour	Low DO levels are consitent with baseline data.
5/10/2024, 9:25 am	EPL35	Nungar Creek, downstream of Tantangara Road	9.88	83.2	9.4	17	11	7.46	70	14.8	Cloudy day, turbulent water, high flow, clear water, no odour	Low DO and EC levels are consitent with baseline data.
13/10/2024, 1:35 pm	EPL36	Camerons Creek, upstream of works in Rock Forest	16.18	100.4	9.87	52	34	5.9	209	0.3	Sunny day, low turbidity, slow flow, small watercourse, no odour, animals closely of the stream	This location is upstream of works and is therefore representative of background conditions.
13/10/2024, 1:11 pm	EPL37	Camerons Creek, downstream of works in Rock Forest	18.45	30.9	9.59	60	39	6.66	185	56.5	Sunny day, turbid water, no odour, slow flow	Low DO and high turbidity are within the historical range for this location and are consistent with background conditions for September 2024.
3/10/2024, 11:24 am	EPL52	GF01 sediment basin	20.23	99.8	9.01	969	620	8.1	85	25.3	Sunny, Clear water, Mid depth	High EC, pH, and turbidity are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant .
-	EPL53	GF01 surface water upstream east	-	-	-	-	-	-	-	-	-	Dry site, no flow
-	EPL54	GF01 surface water upstream west	-	-	-	-	-	-	-	-	-	Dry site, no flow
5/10/2024, 1:41 pm	EPL 66	Tantangara Leachate basin downstream east from Tantangara emplacement area	13.48	94.5	9.85	26	17	7.97	177	20.2	Gale force winds, cloudy day, post morning rain. Visible turbidity and brown coloured water with no odour. Shallow with lowered reservoir levels	Low EC is consistent with historical data and conditions for this location.
30/10/2024, 3:15 pm	EPL67	Nungar Creek surface water downstream west from Tantangara emplacement area	19.8	92.1	8.41	52.5	38	7.57	115	2.96	Sunny afternoon, no wind. Sediment on bank	All readings are within WQO limits.
6/10/2024, 9:43 am	EPL71	Surface water downstream of Marica emplacement	8.78	86.1	10	64	42	7.44	261	67.5	Rainy day, turbid water, no smelly, low level pf water, very slow flow	DO is within the historical baseline water quality result during wet season conditions at Marica.
9/10/2024, 10:54 am	EPL84	F8 Basin	17.17	95.8	9.21	837	563	8.28	169	1000	Sunny Dead algal growth visible High Turbidity greater than 1000 NTU	High EC, pH, and turbidity are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant.
9/10/2024, 11:12 am	EPL85	MY07 Basin	16.93	84.6	8.18	482	313	9.33	142	77.1	Sunny Clear water No Algal growth visible Mid depth in basin	High EC, pH and turbidity are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant.
9/10/2024, 11:05 am	EPL86	LHG01 Basin	17.57	84.8	8.07	1140	756	9.3	99	58	Sunny Clear water low turbidity Mid depth Algal growth on entrance to basin	High EC and turbidity with low DO are due to runoff accumulating in the basin. Water was taken for treatment at the process water treatment plant.

Table 2 - Reservoir Water Quality Data
Talbingo and Tantangara Reservoirs

	Water Quality Objectives (see note 2)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	90 - 110	-	20 - 30	-	6.5 - 8.0	-	1 - 20

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
7/10/2024, 8:17 am	EPL10	Talbingo Reservoir, downstream of road works and upstream of water intake point	14.42	110	11.23	63	41	7.62	174	22.3	Cloudy weather sample tak	High EC remains consistent with baseline conditions. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
7/10/2024, 9:41 am	EPL11	Talbingo Reservoir, downstream of outlet	14.75	72.2	7.32	55	36	7.58	193	10.6	Sample taken on reservoir at EPL 11 point. Cloudy weather	Low DO and High EC remains consistent with baseline conditions. As such, it is anticipated that these exceedances are not a result of Snowy 2.0 construction activities.
16/10/2024, 8:16 am	EPL28	Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River	10.8	88.6	9.81	16.8	15	7.14	203.5	3.86	Heavy fog, slight breeze; cold. Water relatively clear with organic material present; no odour or oily sheen. Wa	This location is upstream of works and is therefore representative of background conditions.
16/10/2024, 9:07 am	EPL29	Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River	12.6	91.2	9.7	16.5	14	6.73	179.7	4.3	Foggy, cold; slight breeze. Water relatively clear with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) is consistent with historical data and conditions for this location.
16/10/2024, 9:00 am	EPL32	Tantangara Reservoir, Tantangara Intake. Downstream of construction works	12.5	91.6	9.76	16.6	14	7.31	226	4.37	Foggy, cold; slight breeze. Water relatively clear with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) is consistent with historical data and conditions for this location.
16/10/2024, 8:40 am	EPL38	Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities	13	93.5	9.86	16.7	14	7.28	223.1	4.33	Heavy fog, cold; slight breeze. Water relatively clear with organic material present; no odour or oily sheen.	Low electrical conductivity (EC) is consistent with historical data and conditions for this location.
5/10/2024, 11:13 am	EPL39	Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works	12.06	69.2	7.45	20	13	6.57	194	11.0	Cloudy day, high level of water, constantly flowing, no odour	This location is upstream of works and is therefore representative of background conditions. Low DO can be attributed to the decreased level of water and the presence of organic material.
10/10/2024, 2:17 pm	EPL40	Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works	16.98	62.5	6.04	70	46	8.08	-78	31.0	Sunny day, light winds. Taken from river. Running water.	This location is upstream of works and is therefore representative of background conditions.
16/10/2024, 9:19 am	EPL 46	Tantangara Reservoir, diffuser outlet discharging into Tantangara Reservoir from Tantangara STP/PWTP	12.5	91.2	9.71	18.1	15	6.55	226.4	4.55	Fog clearing, slight breeze. Water relatively clear with organic material present; no odour or oily sheen.	Low EC is consistent with historical data and conditions for this location.
16/10/2024, 9:12 am	EPL 51	Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet	12.5	90.9	9.68	16.5	14	6.58	221.3	4.51	Fog clearing, slight breeze. Water relatively clear with organic material present; no odour or oily sheen.	Low EC is consistent with historical data and conditions for this location.

Table 3 - Treated Water Quality Data
Talbingo

	Water Quality Objectives (see note 3)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	-	-	700	-	6.5 - 8.0	-	25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
2/10/2024, 8:00 am	EPL41	Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir.	11.58	85.5	9.3	112	73	7.45	138	26.5	Clear water RO startup sample after 5 mins	Slightly elevated turidity however no discharge was occurring at the time of sampling.

Table 4 - Treated Water Quality Data
Tantangara

	Water Quality Objectives (see note 3)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	-	-	200	-	6.5 - 8.0	-	25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
23/10/2024, 10:14 am	EPL50	Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir.	17.6	86.9	8.3	133.1	101	5.8	171.2	1.18	The RO plant is non- functioning due to maintenance upgrades. The sample is from a tank. No discharges have occurred this month. Clear water with no odour or sheen.	The pH levels will continue to be monitored in the coming sampling rounds.

Table 5 - Groundwater Quality Data
GF01 Surface Water and Groundwater

Water Quality Objectives (see note 1)								
Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	
-	-	-	30 - 350	-	6.5 - 8.0	-	-	

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
15/10/2024, 10:43 am	EPL56	GF01 groundwater upstream east	15.96	22.7	2.24	269	175	7.43	192	185	SWL- 10.49 m, sunny day, a bit turbid water, no odour	This location is upstream of works and is therefore representative of background conditions.
15/10/2024, 11:06 am	EPL57	GF01 groundwater upstream west	17.95	36.5	3.48	252	164	7.95	213	196	SWL- 15.38 m, sunny day, turbid water, no odour	This location is upstream of works and is therefore representative of background conditions.
15/10/2024, 1:43 pm	EPL58	GF01 groundwater downstream	18.06	50.1	4.72	809	518	5.88	266	60.1	SWL- 6.72 m, sunny day, clear water, no odour	High EC and low pH are generally consistent with conditions at GF01 during sampling.
19/10/2024, 11:21 am	EPL68	Tantangara groundwater downstream West	13.63	78.7	8.18	30	19	7.88	186	6.8	SWL: 2.36 m. Partly cloudy day, recent rain yesterday and this morning. Water is very clear. No odour.	All readings are within WQO limits.
19/10/2024, 11:43 am	EPL69	Tantangara groundwater downstream East	13.57	87.1	9.05	28	18	7.25	213	4.1	SWL: 3.64 m. Cloudy day, recent rain. Clear water no odour.	Low pH is generally consistent with previous results in the last months. These conditions are following expected changes due to altered climatic conditions.
19/10/2024, 9:11 am	EPL70	Tantangara groundwater upstream	13.04	71.2	7.49	146	95	5.78	278	64.5	SWL: 5.57 m. Cloudy day. Water very clear, no odour	This location is upstream of works and is therefore representative of background conditions.
6/10/2024, 9:13 am	EPL 72	Marica groundwater upstream	10.24	82.1	9.22	36	24	7.84	218	45.9	Rainy day, a bit turbid water, no smelly	This location is upgradient of works and is therefore representative of background conditions.
6/10/2024, 9:32 am	EPL73	Marica groundwater downstream	10.16	81.3	9.14	64	42	7.69	263	54.1	Rainy day, a bit turbid water, no smelly	All readings are within WQO limits.
1/10/2024, 1:47 pm	EPL80	LHG groundwater upstream	19.2	75.7	6.97	963	616	6.75	-6	79.1	SWL 20.26m, Sunny, Clear water	This location is upstream of works and is therefore representative of background conditions.
1/10/2024, 12:29 pm	EPL81	LHG groundwater downstream	16.75	34.1	3.3	772	494	6.41	-112	105	SWL 3.16m, Sunny, Clear water	Elevated EC and low pH are generally consistent with the previous results for this location and the exceedance is consistent with the historical data.
1/10/2024, 1:45 pm	EPL82	MY groundwater upstream	17.13	18.6	1.77	2970	1900	6.66	17	175	SWL 9.27m, Sunny, Clear water	This location is upstream of works and is therefore representative of background conditions and within historical ranges.
1/10/2024, 12:12 pm	EPL83	MY groundwater downstream	20.62	61.1	5.48	643	411	6.81	114	1000	SWL 3.09m, Sunny, Turbid water greater than 1000NTU	Elevated EC is generally consistent with background conditions and historical data recorded in this location.
1/10/2024, 1:43 pm	EPL87	MY groundwater downstream	15.02	89.8	9.04	597	382	6.74	116	1000	SWL 2.7m, Sunny, Turbid water greater than 1000NTU	Elevated EC is generally consistent with background conditions and historical data recorded in this location.
1/10/2024, 11:49 am	EPL88	MY groundwater downstream	17.05	23.6	2.27	1910	1220	6.92	9	7.1	SWL 2.93m, Sunny, Clear water	Elevated EC is generally consistent with background conditions and previous conditions recorded in the last sampling rounds.
1/10/2024, 10:37 am	EPL89	LHG groundwater downstream	15.96	61.7	6.08	348	226	7.51	108	114	SWL 2.65m, Sunny, Clear water	All readings are within WQO limits.
15/10/2024, 11:44 am	EPL90	GF01 groundwater downstream	17.51	61	5.85	363	237	6.17	182	246	SWL- 13.61 m, sunny day, turbid water, no odour	Low pH is generally consistent with surrounding conditions and previous results recorded.
15/10/2024, 10:19 am	EPL91	GF01 groundwater downstream	17.5	28.3	2.71	325	211	6.92	209	92.7	SWL- 8.98 m, sunny day, turbid water, no odour	All readings are within WQO limits.
15/10/2024, 10:32 am	EPL92	GF01 groundwater downstream	16.69	58.7	5.71	160	104	7.05	174	1000	SWL- 13.49 m, sunny day, very turbid water, no odour	All readings are within WQO limits.
15/10/2024, 11:33 am	EPL93	GF01 groundwater downstream	16.76	26.4	2.56	682	437	6.74	80	200	SWL- 13.62 m, sunny day, turbid water, no odour	All readings are within WQO limits.
15/10/2024, 11:27 am	EPL94	GF01 groundwater downstream	17.17	45.1	4.34	273	177	7.32	230	283	SWL- 14.4 m, sunny day, turbid water, no odour	All readings are within WQO limits.
15/10/2024, 1:35 pm	EPL95	GF01 groundwater downstream	19.45	15.9	1.46	550	352	5.8	271	108	SWL- 7.2 m, sunny day, a bit turbid water, no odour	Elevated EC and low pH are generally consistent with the background and previous conditions recorded in the last sampling rounds.
15/10/2024, 1:21 pm	EPL96	GF01 groundwater downstream	18.98	25.5	2.36	842	534	6.81	243	293	SWL- 5.1 m, sunny day, turbid water, no odour	Elevated EC is generally consistent with surrounding conditions.
15/10/2024, 11:56 am	EPL97	GF01 groundwater downstream	18.12	31	2.92	478	311	6.42	220	107	SWL- 6.31 m, sunny day, a bit turbid water, no odour	Elevated EC and pH levels are generally consistent with surrounding conditions.

Note 1: Water Quality Objective values for the Yarrangobilly River and Minor Watercourses refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) that are reported in Tables 3.3.2 and 3.3.3 of ANZECC/ ARMCANZ (2000).

Note 2: Water Quality Objective values for Talbingo Reservoir are the default trigger values for physical and chemical stressors in south-east Australia (freshwater lakes and reservoirs) that are reported in Tables 3.3.2 and 3.3.3 of ANZECC/ ARMCANZ (2000).

Note 3: Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

Note 4: Water Quality Objective values for groundwater reference the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for pH and electrical conductivity.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01-31 October 2024 Groundwater

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL56	EPL57	EPL58	EPL68	EPL69	EPL70	EPL72	EPL73	EPL80	EPL81	EPL82	EPL83	EPL87	EPL88	EPL89	EPL 90	EPL 91	EPL92	EPL93	EPL94	EPL95	EPL96	EPL97
Physiochemical				15/10/2024	15/10/2024	15/10/2024	19/10/2024	19/10/2024	19/10/2024	6/10/2024	6/10/2024	1/10/2024	1/10/2024	1/10/2024	1/10/2024	1/10/2024	1/10/2024	1/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024
pH	pH Unit	-	6.5-8	7.43	7.95	5.88	7.88	7.25	5.78	7.84	7.69	6.75	6.41	6.66	6.81	6.74	6.92	7.51	6.17	6.92	7.05	6.74	7.32	5.8	6.81	6.42
Electrical Conductivity	µS/cm	-	30-350	269	252	809	30	28	146	36	64	963	772	2970	643	597	1910	348	363	325	160	682	273	550	842	478
Oxidation Reduction Potential	mV	-	No Water Quality Objective Value	192	213	266	186	213	278	218	263	-6	-112	17	114	116	9	108	182	209	174	80	230	271	243	220
Temperature	°C	-	No Water Quality Objective Value	15.96	17.95	18.06	13.63	13.57	13.04	10.24	10.16	19.2	16.75	17.13	20.62	15.02	17.05	15.96	17.51	17.5	16.69	16.76	17.17	19.45	18.98	18.12
Dissolved Oxygen	% saturation	-	No Water Quality Objective Value	22.7	36.5	50.1	78.7	87.1	71.2	82.1	81.3	75.7	34.1	18.6	61.1	89.8	23.6	61.7	61	28.3	58.7	26.4	45.1	15.9	25.5	31
Turbidity	NTU	-	No Water Quality Objective Value	185	196	60.1	6.8	4.1	64.5	45.9	54.1	79.1	105	175	1000	1000	7.1	114	246	92.7	1000	200	283	108	293	107
Laboratory analytes																										
TSS	mg/L	5	No Water Quality Objective Value	31	101	170	25	54	34	117	394	36	116	224	2,520	1,260	<5	68	578	59	620	176	196	160	1,240	229
Hardness as CaCO3	mg/L	1	No Water Quality Objective Value	137	127	269	<1	<1	16	11	20	387	344	1,250	89	78	124	59	15	126	50	131	87	183	287	153
Nutrients																										
Ammonia as N	µg/L	10	13	<10	10	20	<10	<10	70	<10	20	30	40	110	10	20	260	<10	<10	40	30	10	<10	10	<10	10
Nitrite + Nitrate as N (Nox)	µg/L	10	15	<10	640	48,000	1,240	160	400	<10	10	10	20	10	4,780	3,830	<10	220	290	20	<10	20	<10	29,400	28,000	600
Kjeldahl Nitrogen Total	µg/L	100	No Water Quality Objective Value	200	400	16,100	<100	<100	200	<100	200	200	200	900	1,600	2,400	600	300	400	200	400	300	200	8,400	6,000	400
Nitrogen (Total)	µg/L	100	250	200	1,000	64,100	1,200	200	600	<100	200	200	200	900	6,400	6,200	600	500	700	200	400	300	200	37,800	34,000	1,000
Reactive Phosphorus	µg/L	1	15	3	9	2	<1	2	12	12	10	4	6	4	18	9	13	11	4	7	2	30	4	5	4	5
Phosphorus (Total)	µg/L	10	20	60	260	70	20	40	70	50	50	110	260	510	810	840	100	100	260	160	340	250	130	200	250	170
Inorganics																										
Cyanide Total	µg/L	4	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons																										
Oil and Grease	mg/L	1	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals																										
Aluminium (dissolved)	µg/L	5	27	<5	<5	<5	<5	15	<5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Aluminium (total)	µg/L	5	No Water Quality Objective Value	554	1,640	2,830	929	1,340	1,140	1,950	1,010	581	1,410	1,020	26,200	22,600	14	910	3,540	975	2,860	518	932	1,080	5,130	1,560
Arsenic (dissolved)	µg/L	0.2	0.8	<0.2	2.0	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	9.4	1.9	4.4	3.9	0.3	9.5	0.2	<0.2	0.5	0.4	14.8	0.5	1.2	<0.2	1.0
Arsenic (total)	µg/L	0.2	No Water Quality Objective Value	0.4	2.9	4.3	0.2	0.5	0.2	-	-	66.5	66.0	19.1	53.2	7.9	21.5	0.7	2.6	4.4	2.2	17.4	6.7	4.1	6.2	4.6
Chromium (III+VI) (dissolved)	µg/L	0.2	0.01	<0.2	<0.2	1.2	<0.2	<0.2	<0.2	<0.2	0.2	0.6	<0.2	<0.2	25.8	17.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2
Chromium (III+VI) (total)	µg/L	0.2	No Water Quality Objective Value	1.9	3.8	9.8	1.4	1.3	1.8	-	-	1.2	2.1	1.6	100	75.7	0.3	1.5	8.0	2.8	3.0	1.2	2.8	3.1	13.4	4.0
Copper (dissolved)	µg/L	0.5	1	20.1	4.0	<0.5	3.5	<0.5	29.5	280	1.3	<0.5	<0.5	<0.5	3.4	1.2	<0.5	8.0	<0.5	<0.5	<0.5	<0.5	<0.5	2.4	<0.5	<0.5
Copper (total)	µg/L	0.5	No Water Quality Objective Value	63.0	75.3	5.4	7.4	2.2	45.7	-	-	0.7	2.4	0.5	88.6	41.8	1.8	33.9	7.9	1.5	4.4	0.6	1.8	11.1	12.5	1.8
Iron (dissolved)	µg/L	2	300	<2	<2	<2	<2	11	<2	<2	<2	<2	6	918	3	5	3	<2	<2	<2	<2	<2	<2	<2	<2	4
Iron (total)	µg/L	2	No Water Quality Objective Value	718	1,990	5,080	413	864	702	-	-	3,520	6,900	3,760	36,100	28,100	311	841	4,700	2,200	1,900	670	2,680	1,740	9,790	2,900
Lead (dissolved)	µg/L	0.1	1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.7	<0.1	<0.1	<0.1	<0.1	0.2
Lead (total)	µg/L	0.1	No Water Quality Objective Value	3.0	4.6	31.8	0.3	1.0	0.6	-	-	<0.1	2.0	1.9	49.1	33.4	<0.1	0.6	11.6	17.7	62.1	2.1	4.0	6.2	48.5	22.7
Manganese (dissolved)	µg/L	0.5	1,200	5.7	47.6	51.0	2.8	<0.5	3.6	7.1	9.4	222	227	386	13.9	32.2	184	10.3	21.0	69.6	183	256	668	411	5.1	537
Manganese (total)	µg/L	0.5	No Water Quality Objective Value	47.4	168	144	17.4	51.9	23.0	-	-	242	253	415	913	500	231	20.4	115	327	246	281	608	455	502	624
Nickel (dissolved)	µg/L	0.5	8	<0.5	<0.5	2.8	0.8	<0.5	1.0	1.7	1.6	18.2	2.4	3.2	2.1	1.7	4.9	2.2	3.2	<0.5	3.8	1.4	2.1	10.2	3.2	4.9
Nickel (total)	µg/L	0.5	No Water Quality Objective Value	2.2	6.4	11.2	1.7	1.4	2.0	-	-	22.0	5.2	4.8	101	78.7	6.6	4.5	15.6	3.7	7.6	3.7	5.6	14.3	27.4	12.2
Silver (dissolved)	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver (total)	µg/L	0.01	No Water Quality Objective Value	<0.01	0.02	0.22	<0.01	<0.01	<0.01	-	-	1.28	<0.01	<0.01	0.20	0.08	<0.01	<0.01	0.02	0.02	0.03	<0.01	<0.01	0.01	0.07	0.01
Zinc (dissolved)	µg/L	1	2.4	7	1	6	3	<1	2	7	<1	4	<1	5	1	<1	2	2	15	4	21	<1	19	35	4	56
Zinc (total)	µg/L	1	No Water Quality Objective Value	13	16	27	5	5	4	-	-	9	9	15	221	139	4	5	53	18	45	6	135	45	70	180

* Water Quality Objective values for groundwater refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for the protection of 99% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

\- Sample not required at this location.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01-31 October 2024 - Talbingo and Tantangara Reservoir

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL10	EPL11	EPL28	EPL29	EPL32	EPL38	EPL39	EPL40	EPL46	EPL51
Field				7/10/24	7/10/24	16/10/24	16/10/24	16/10/24	16/10/24	5/10/24	13/10/24	16/10/24	16/10/24
pH	**pH Unit**	-	6.5-8	7.62	7.58	7.14	6.73	7.31	7.28	6.57	8.08	6.55	6.58
Electrical Conductivity	**µS/cm**	-	20-30	63	55	16.8	16.5	16.6	16.7	20	70	18.1	16.5
Oxidation Reduction Potential	**mV**	-	No Water Quality Objective Value	174	193	203.5	179.7	226	223.1	194	-78	226.4	221.3
Temperature	**°C**	-	No Water Quality Objective Value	14.42	14.75	10.8	12.6	12.5	13	12.06	16.98	12.5	12.5
Dissolved Oxygen	**% saturation**	-	90-110	110	72.2	88.6	91.2	91.6	93.5	69.2	62.5	91.2	90.9
Turbidity	**NTU**	-	1-20	22.3	10.6	3.86	4.3	4.37	4.33	11	31	4.55	4.51
Laboratory analytes													
Total suspended solids	**mg/L**	5	No Water Quality Objective Value	<5	<5	<5	<5	<5	<5	10	6	<5	<5
Hardness as $CaCO_3$ (filtered)	**mg/L**	1	No Water Quality Objective Value	26	19	2	2	2	2	<1	2	2	2
Nutrients													
Ammonia as N	**µg/L**	10	10	<10	<10	10	40	50	30	<10	10	100	40
Nitrite + Nitrate as N (NOx)	**µg/L**	10	10	<10	<10	<10	30	30	40	<10	10	60	50
Kjeldahl Nitrogen Total	**µg/L**	100	No Water Quality Objective Value	200	200	200	300	300	400	200	100	300	300
Nitrogen (Total)	**µg/L**	100	350	200	200	200	300	300	400	200	100	400	400
Reactive Phosphorus	**µg/L**	1	5	6	5	3	<1	<1	<1	1	<1	<1	<1
Phosphorus (Total)	**µg/L**	10	10	40	20	20	20	20	20	<10	30	50	10
Inorganics													
Cyanide Total	**µg/L**	4	7	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons													
Oil and Grease	**mg/L**	1	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals													
Aluminium (dissolved)	**µg/L**	5	55	8	8	15	32	31	31	19	<5	30	29
Arsenic (dissolved)	**µg/L**	0.2	13	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium (III+VI) (dissolved)	**µg/L**	0.2	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2
Copper (dissolved)	**µg/L**	0.5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iron (dissolved)	**µg/L**	2	300	13	11	57	90	88	89	37	3	89	87
Lead (dissolved)	**µg/L**	0.1	3.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Manganese (dissolved)	**µg/L**	0.5	1,900	0.7	0.5	14.2	5.9	4.5	7.2	2.1	3.4	5.8	5.8
Nickel (dissolved)	**µg/L**	0.5	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver (dissolved)	**µg/L**	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (dissolved)	**µg/L**	1	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Biological													
Faecal Coliforms	**CFU/100mL**	1	10/100^	3	7	11	-	-	-	-	-	-	<1
Biological Oxygen Demand	**mg/L**	2	1/5^	5	5	4	-	-	-	-	-	-	4

* Water Quality Objective values for Talbingo and Tantangara Reservoir refer to the default trigger values for physical and chemical stressors in south-east Australia (fresh lakes and reservoirs) for the protection of 95% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

^ 90th percentile concentration limits / 100 percentile concentration limits

\- Sample not required at this location.

** Algal blooms can present as feacal coliforms - green tinge noted in Talbingo Resevroir water at time of sampling.

Snowy Hydro 2.0 Main Works
Monthly EPL Sampling: 01 - 31 October 2024 - Surface Water

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL5	EPL6	EPL8	EPL9	EPL12	EPL14	EPL15	EPL16	EPL24	EPL26	EPL27	EPL30	EPL31	EPL33	EPL34	EPL35	EPL36	EPL37	EPL52	EPL53	EPL54	EPL55	EPL66	EPL67	EPL71	EPL84	EPL85	EPL86
Field				4/10/24	4/10/24	4/10/24	4/10/24	4/10/24	4/10/24	4/10/24	4/10/24	1/10/24	6/10/24	6/10/24	5/10/24	5/10/24	5/10/24	5/10/24	5/10/24	13/10/24	13/10/24	3/10/24	-	-	3/10/24	23/10/24	30/10/24	6/10/24	9/10/24	9/10/24	9/10/24
pH	-	-	6.5-8	7.45	6.7	6.65	6.69	6.62	6.64	6.7	6.58	7.18	7.11	7.9	6.4	6.42	6.68	6.57	7.46	5.9	6.66	8.1	Dry	Dry	7.33	7.97	7.97	7.44	8.28	9.33	9.33
Electrical Conductivity	µS/cm	-	30-350	81	60	93	82	81	78	77	88	301	63	33	29	24	22	99	17	52	60	969	Dry	Dry	875	26	52.5	64	837	482	1140
Oxidation Reduction Potential	mV	-	No Water Quality Objective Value	189	235	235	237	223	241	236	240	170	163	134	187	185	157	94	70	209	185	85	Dry	Dry	130	177	115	261	95.8	84.6	84.8
Temperature	°C	-	No Water Quality Objective Value	11.26	10.19	12.32	12.13	11.81	6.64	12.02	12.66	17.73	11.86	9.95	11.22	11.21	12.6	12.14	9.88	16.18	18.45	20.23	Dry	Dry	17.69	13.48	19.8	8.78	17.17	16.93	17.57
Dissolved Oxygen	% saturation	-	90-110	106.7	95.4	89	90.8	96.4	89.8	91.8	80.1	70.9	107.5	96	71.2	71.2	84.7	86.3	83.2	100.4	30.9	99.8	Dry	Dry	76.7	94.5	92.1	86.1	95.8	84.6	84.8
Turbidity	NTU	-	2-25	3.4	7.9	6.2	3.7	3.7	3.5	3.8	10.4	23.4	19.2	5.8	10.1	7.1	6.3	20.5	14.8	0.3	56.5	25.3	Dry	Dry	8.2	20.2	2.96	67.5	1000	77.1	58
Laboratory analytes																															
TSS	mg/L	5	No Water Quality Objective Value	14	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7	9	<5	12	12	5	31	<5	Dry	Dry	21	6	6	16	632	8	10
Hardness as CaCO3	mg/L	1	No Water Quality Objective Value	36	26	38	36	38	36	36	36	83	9	9	7	7	2	<1	<1	17	17	212	Dry	Dry	223	2	4	18	26	21	307
Nutrients																															
Ammonia as N	µg/L	10	13	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	60	<10	<10	10	20	10	Dry	Dry	<10	3,580	20	<10	40	40	20
Nitrite + Nitrate as N (NOx)	µg/L	10	15	<10	<10	40	<10	<10	<10	<10	<10	12,900	<10	<10	120	<10	20	<10	<10	<10	<10	35,400	Dry	Dry	39,300	8,910	30	20	5,720	4,450	21,700
Kjeldahl Nitrogen Total	µg/L	100	No Water Quality Objective Value	<100	<100	100	100	200	100	100	100	600	<100	100	200	200	400	300	300	500	800	3,900	Dry	Dry	3,900	5,200	200	<100	4,600	1,400	1,600
Nitrogen (Total)	µg/L	100	250	<100	<100	100	100	200	100	100	100	13,500	<100	100	300	200	400	300	300	500	800	39,300	Dry	Dry	43,200	14,100	200	<100	10,300	5,800	23,300
Reactive Phosphorus	µg/L	1	15	9	12	10	9	8	9	7	8	7	6	8	3	4	4	1	<1	<1	3	2	Dry	Dry	6	<1	<1	8	13	5	7
Phosphorus (Total)	µg/L	10	20	10	20	30	20	20	<10	20	30	40	20	20	10	20	<10	20	10	30	80	20	Dry	Dry	20	20	10	80	1,390	<100	170
Inorganics																															
Cyanide Total	µg/L	4	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	Dry	Dry	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons																															
Oil and Grease	mg/L	1	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Dry	Dry	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals																															
Aluminium (dissolved)	µg/L	5	27	8	<5	10	9	9	10	9	9	<5	6	6	22	21	28	29	31	45	61	8	Dry	Dry	<5	22	<5	11	15	22	<5
Aluminium (total)	µg/L	5	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	Dry	Dry	109	291	127	-	26,800	2,380	818
Arsenic (dissolved)	µg/L	0.2	0.8	0.3	<0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	0.7	3.0	Dry	Dry	0.4	<0.2	<0.2	0.2	8.3	4.6	2.2
Arsenic (total)	µg/L	0.2	No Water Quality Objective Value	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	3.1	Dry	Dry	0.4	<0.2	<0.2	-	14.6	5.2	3.1
Chromium (III+VI) (dissolved)	µg/L	0.2	0.01	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.3	9.8	Dry	Dry	3.1	<0.2	<0.2	<0.2	53.1	66.7	4.8
Chromium (III+VI) (total)	µg/L	0.2	No Water Quality Objective Value	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	9.8	Dry	Dry	3.3	0.4	0.2	-	129	76.6	6.6
Copper (dissolved)	µg/L	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	Dry	Dry	<0.5	<0.5	<0.5	<0.5	2.2	0.6	2.0
Copper (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	<0.5	Dry	Dry	0.6	<0.5	<0.5	-	46.9	3.7	3.6
Iron (dissolved)	µg/L	2	300	13	6	12	13	12	13	14	13	6	15	13	34	27	84	46	48	336	487	<2	Dry	Dry	<2	89	3	24	28	<2	<2
Iron (total)	µg/L	2	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	Dry	Dry	251	388	208	-	40,500	3,020	964
Lead (dissolved)	µg/L	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	Dry	Dry	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Lead (total)	µg/L	0.1	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	Dry	Dry	1.4	<0.1	<0.1	-	51.9	3.4	1.9
Manganese (dissolved)	µg/L	0.5	1,200	1.5	1.0	1.2	2.5	1.0	1.4	1.3	1.7	34.5	2.4	1.5	2.1	1.7	1.9	4.2	4.2	13.4	10.2	<0.5	Dry	Dry	0.5	49.6	2.8	11.7	<0.5	<0.5	0.7
Manganese (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.8	Dry	Dry	14.9	65.3	6	-	833	61.7	45.5
Nickel (dissolved)	µg/L	0.5	8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	0.9	1.0	0.6	Dry	Dry	<0.5	<0.5	<0.5	0.9	0.6	<0.5	0.8
Nickel (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	Dry	Dry	0.8	<0.5	<0.5	-	103	8.6	2.8
Silver (dissolved)	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Dry	Dry	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver (total)	µg/L	0.01	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	Dry	Dry	<0.01	<0.01	<0.01	-	0.07	<0.01	<0.01
Zinc (dissolved)	µg/L	1	2.4	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	25	1	1	<1	2	2	Dry	Dry	1	<1	<1	<1	<1	<1	<1
Zinc (total)	µg/L	1	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	Dry	Dry	3	<1	<1	-	191	13	5

* Water Quality Objective values for surface water refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for the protection of 99% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

\- Sample not required at this location.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01 - 31 October 2024 - Treated Water

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL 41	EPL 43	EPL 44	EPL 45	EPL 47	EPL 48	EPL 49	EPL 50
Flow Rate				2/10/2024							23/10/2024
Inflow#	**ML/day**	-	-	-	0.0000	0.5790	0.0506	0.1780	0.0748	0.5509	-
Outflow#	**ML/day**	-	4.32 (EPL 43 / 50)	-	-	-	-	-	-	-	-
Field											
pH	**pH Unit**	-	6.5-8.5	7.45	-	-	-	-	-	-	5.8
Electrical Conductivity	**µS/cm**	-	700 (EPL 41) / 200 (EPL 50)	112	-	-	-	-	-	-	133.1
Oxidation Reduction Potential	**mV**	-	No Water Quality Objective Value	138	-	-	-	-	-	-	171.2
Temperature	**°C**	-	15	11.58	-	-	-	-	-	-	17.6
Dissolved Oxygen	**% saturation**	-	No Water Quality Objective Value	9.3	-	-	-	-	-	-	86.9
Turbidity	**NTU**	-	<25	26.5	-	-	-	-	-	-	1.18
Laboratory analytes											
Total suspended solids	**mg/L**	5	5/10	<5	-	-	-	-	-	-	<5
Hardness as $CaCO_3$ (filtered)	**mg/L**	1	No Water Quality Objective Value	<1	-	-	-	-	-	-	<1
Nutrients											
Ammonia as N	**µg/L**	10	200/2000^	60	-	-	-	-	-	-	3580
Kjeldahl Nitrogen Total	**µg/L**	100	No Water Quality Objective Value	200	-	-	-	-	-	-	5200
Nitrogen (Total)	**µg/L**	100	350/-^	200	-	-	-	-	-	-	14100
Reactive Phosphorus	**µg/L**	1	No Water Quality Objective Value	2	-	-	-	-	-	-	<1
Phosphorus (Total)	**µg/L**	10	100/300^	20	-	-	-	-	-	-	20
Inorganics											
Cyanide Total	**µg/L**	4	No Water Quality Objective Value	<4	-	-	-	-	-	-	34.00
Hydrocarbons											
Oil and Grease	**mg/L**	1	2/5^	<1.0	-	-	-	-	-	-	<1
Metals											
Aluminium (dissolved)	**µg/L**	5	55	<5	-	-	-	-	-	-	<5
Arsenic (dissolved)	**µg/L**	0.2	13	<0.2	-	-	-	-	-	-	0.4
Chromium (III+VI) (dissolved)	**µg/L**	0.2	1	<0.2	-	-	-	-	-	-	5
Copper (dissolved)	**µg/L**	0.5	14	<0.5	-	-	-	-	-	-	<0.5
Iron (dissolved)	**µg/L**	2	300	<2	-	-	-	-	-	-	<2
Lead (dissolved)	**µg/L**	0.1	3.4	<0.1	-	-	-	-	-	-	<0.1
Manganese (dissolved)	**µg/L**	0.5	1,900	<0.5	-	-	-	-	-	-	<0.5
Nickel (dissolved)	**µg/L**	0.5	11	<0.5	-	-	-	-	-	-	<0.5
Silver (dissolved)	**µg/L**	0.01	0.05	<0.01	-	-	-	-	-	-	<0.01
Zinc (dissolved)	**µg/L**	1	8	12	-	-	-	-	-	-	<1
Biological											
Faecal Coliforms	**CFU/100mL**	1	10/100^	<1	-	-	-	-	-	-	<1
Biological Oxygen Demand	**mg/L**	2	5	<2	-	-	-	-	-	-	<2

Note: Treated water was not being discharged at Talbingo ot Tantangara Reservoirs at the time of EPL sampling.
There is no 100th percentile limit for Nitrogen (Total).

* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

\- Samples not required

^ 90 Percentile concentration limit/100 Percentile limit

\# Inflows to STP and CWTP do not directly correspond to outflow at RO as much of the water is reused on site

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01 - 31 October 2024 - Treated Water

Date	EPL 43 *	EPL 50 ^	EPL 44	EPL 45	EPL 47	EPL 48	EPL 49
	Discharge volume (Megalitres)		Discharge volume (Megalitres)				
1/10/2024	-	-	0.60	0.05	0.12	0.10	0.43
2/10/2024	-	-	0.58	0.05	0.15	0.08	0.68
3/10/2024	-	-	0.53	0.07	0.08	0.09	0.83
4/10/2024	0.01	-	0.46	0.04	0.16	0.08	0.58
5/10/2024	-	-	0.18	0.05	0.25	0.08	0.54
6/10/2024	-	-	0.44	0.05	0.17	0.08	0.43
7/10/2024	0.85	-	0.71	0.05	0.17	0.07	0.51
8/10/2024	-	-	0.66	0.05	0.17	0.07	0.74
9/10/2024	-	-	0.70	0.05	0.23	0.09	0.60
10/10/2024	-	-	0.74	0.04	0.08	0.10	0.39
11/10/2024	0.48	-	0.51	0.06	0.15	0.09	0.46
12/10/2024	-	-	0.87	0.05	0.17	0.08	0.77
13/10/2024	0.57	-	0.84	0.04	0.18	0.07	0.74
14/10/2024	-	-	0.69	0.04	0.17	0.08	0.71
15/10/2024	0.35	-	0.69	0.04	0.18	0.08	0.59
16/10/2024	0.49	-	0.70	0.05	0.19	0.07	0.61
17/10/2024	-	-	0.67	0.06	0.16	0.07	0.73
18/10/2024	-	-	0.42	0.07	0.15	0.08	0.41
19/10/2024	-	-	0.66	0.04	0.21	0.07	0.41
20/10/2024	-	-	0.61	0.00	0.18	0.08	0.94
21/10/2024	-	-	0.46	0.00	0.18	0.07	0.58
22/10/2024	-	-	0.57	0.00	0.14	0.08	0.38
23/10/2024	-	-	0.65	0.00	0.15	0.05	0.17
24/10/2024	-	-	0.54	0.00	0.24	0.06	0.43
25/10/2024	-	-	0.50	0.26	0.19	0.08	0.54
26/10/2024	-	-	0.56	0.06	0.21	0.07	0.62
27/10/2024	-	-	0.45	0.04	0.20	0.06	0.72
28/10/2024	-	-	0.67	0.06	0.19	0.07	0.72
29/10/2024	-	-	0.61	0.07	0.24	0.06	0.16
30/10/2024	-	-	0.46	0.02	0.20	0.07	0.36
31/10/2024	-	-	0.26	0.07	0.21	0.07	0.28

Note: The EPL discharge volume limit for EPL 43 and 50 is 4.32 megalitres per day. Compliance with this criteria was met during the reporting month.

* The maximum flow rate capacity for Lobs Hole STP/PWTP during the reporting month was 9.84 ML/day.

^ The maximum flow rate capacity for Tantangara STP/PWTP during the reporting month was 0.0 ML/day

\- Water not discharged on this day

-- Flow meter non-operational. Water volumes are considered to be similar daily flows to those recorded for each respective plant as works progressed at the same rate.

2024 EPL 21266 In Situ Water Quality Measurements

EPL Monthly Monitoring November 2024

Table 1 - Surface Water Quality Data
River and Minor Watercourses

Water Quality Objectives (see note 1)							
Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
-	90 - 110	-	30 - 350	-	6.5 - 8.0	-	2 - 25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
3/11/2024, 1:24 pm	EPL5	Yarrangobilly River, upstream of the exploratory tunnel and construction pad	20.33	109.4	9.88	100	65	7.64	52	2.04	Sunny day, very clear water, constant flow, no odour, a bit turbulent	All readings are within WQO limits.
3/11/2024, 2:00 pm	EPL6	Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence	18.79	107.8	10.04	74	48	7.47	99	2.48	Sunny day, very clear water, constant flow, no odour, small stream	All readings are within WQO limits.
3/11/2024, 2:49 pm	EPL8	Yarrangobilly River, downstream of Lick Hole Gully	21.85	90.2	7.9	107	70	7.85	93	1.83	Sunny day, very clear water, constant flow, no odour, a bit turbulent water	Low turbidity is consistent with historical ranges for this location.
3/11/2024, 3:16 pm	EPL9	Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir	21.72	92.6	8.14	102	92.6	7.91	95	3.61	Sunny day, very clear water, constant flow, no odour	All readings are within WQO limits.
3/11/2024, 1:42 pm	EPL12	Yarrangobilly River, immediately downstream of portal pad	20.41	100.7	9.08	100	65	7.65	88	1.89	Sunny day, very clear water, constant flow, no odour	Low turbidity is consistent with background conditions during sampling for this location.
3/11/2024, 2:18 pm	EPL14	Yarrangobilly River, downstream of road construction areas	22.84	102.2	8.79	97	63	7.95	88	1.87	Sunny day, very clear water, constant flow, no odour, low level of water	Low turbidity is consistent with background conditions during sampling for this location.
3/11/2024, 2:30 pm	EPL15	Yarrangobilly River, downstream of road construction areas	21.2	105.4	9.36	96	62	7.93	91	1.28	Sunny day, very clear water, constant flow, no odour, low level of water	Low turbidity is consistent with historical ranges for this location.
3/11/2024, 3:31 pm	EPL16	Yarrangobilly River, downstream of road construction areas	22.54	94.2	8.15	107	70	7.89	89	4.9	Sunny day, very clear water, constantly flow, no odour, a bit turbulent	All readings are within WQO limits.
4/11/2024, 12:27 pm	EPL24	Yarrangobilly River tributary (Watercourse 2), directly downstream of road	14.58	66.3	6.74	655	419	6.58	72	0	Sunny day, clear water, slow flow, no smell	Low DO and high EC align with the historical ranges. Probe due for replacement.
1/11/2024, 1:33 pm	EPL26	Eucumbene River downstream of Marica Road	15.16	92.7	9.3	37	24	6.83	164	0	Sunny day, clear water, no odour, slow flow, low level of water	Low turbidity within historical ranges. Probe due for replacement.
1/11/2024, 1:26 pm	EPL27	Eucumbene River upstream of Marica Road	16.44	77	7.52	48	31	6.61	165	0	Sunny day, clear water, no odour, slow flow, low level of water	This location is upstream of works and is therefore representative of background conditions. Probe due for replacement.
2/11/2024, 10:04 am	EPL30	Kellys Plain Creek, downstream of accommodation camp and laydown areas	12.86	80.6	8.52	29	19	6.09	186	2.9	Sunny day, clear water, no odour, slow flow	Low DO, EC, and pH are generally consistent with background conditions and are within historical ranges.
2/11/2024, 9:41 am	EPL31	Kellys Plain Creek, upstream of accommodation camp and laydown areas	12.97	81	8.54	25	16	6.24	178	2.4	Sunny day, clear water, no odour, slow flow	Low DO , EC and pH are generally consistent with background conditions and are within historical ranges.
2/11/2024, 8:58 am	EPL33	Murrumbidgee River, downstream of Tantangara reservoir outlet	14.36	91.4	9.34	24	15	6.5	158	4.2	Sunny day, clear water, no odour, slow flow	Low EC aligns with historical data for November.
2/11/2024, 8:19 am	EPL34	Nungar Creek, upstream of Tantangara Road	13.2	99.1	10.39	34	22	7.85	109	1.3	Sunny day, clear water, no odour, slow flow	This location is upstream of works and is therefore representative of background conditions.
2/11/2024, 8:24 am	EPL35	Nungar Creek, downstream of Tantangara Road	12.72	99.7	10.57	22	14	7.48	112	0.2	Sunny day, clear water, no odour, slow flow	Low EC is consistent with background conditions. Low DO is being monitored to ensure variance is attributed to natural fluctuations.
9/11/2024, 11:01 am	EPL36	Camerons Creek, upstream of works in Rock Forest	15.03	82.8	8.34	61	40	6.95	85	69.3	Sunny, Slight flow in creek, Clear water	This location is upstream of works and is therefore representative of background conditions.
9/11/2024, 10:36 am	EPL37	Camerons Creek, downstream of works in Rock Forest	16.75	85.7	8.33	75	49	7.24	60	57.8	Sunny, Slight flow in creek, Clear water	Low DO is within the historical range and is consistent with background conditions for this location.
5/11/2024, 12:03 pm	EPL52	GF01 leachate basin	21.2	90.6	8.02	965	618	8.47	-10	66.8	sunny day, turbid water, no odour	High pH, Turbidity and EC are due to runoff accumulating in the sediment basin. Water was taken for treatment at the process water treatment plant or re-use where parameters were met.
-	EPL53	GF01 surface water upstream east	-	-	-	-	-	-	-	-	-	Dry site, no flow
-	EPL54	GF01 surface water upstream west	-	-	-	-	-	-	-	-	-	Dry site, no flow
5/11/2024, 11:55 am	EPL55	GF01 surface water downstream	-	-	-	-	-	-	-	-	This location is dry and it's not a representation for sampling	Dry site, no flow
16/11/2024, 11:15 am	EPL66	Tantangara Leachate basin downstream east from Tantangara emplacement area	19.48	69.8	6.41	24	16	7.38	158	6.3	sunny day, clear water, no odour	Low EC is within the historical range and is consistent with background conditions for this location.
16/11/2024, 10:57 am	EPL67	Nungar Creek surface water downstream west from Tantangara emplacement area	18.16	78.8	7.44	22	14	7.41	155	4	sunny day, clear water, no odour, contantly flowing	Low EC is within the historical range and is consistent with background conditions for this location for November 2024.
1/11/2024, 11:12 am	EPL71	Surface water downstream of Marica emplacement	12.93	65.4	6.9	71	46	6.29	271	20.4	sunny day, turbid water, no odour, small flow, low level of water, constantly flow	Low DO and pH are within the historical range and are consistent with background conditions for this location for November 2024.
4/11/2024, 2:38 pm	EPL84	F8 Basin	23.4	162.8	13.8	1530	982	8.3	57	1000	Sunny day, turbid water, no odour	High pH, EC, NTU and DO due to runoff accumulating in the sediment basin. Water was taken for treatment at the process water treatment plant or re-use where parameters where met.
4/11/2024, 2:48 pm	EPL85	MY07 Basin	21.77	64.8	5.68	695	445	10.45	-2	93.9	Sunny day, turbid water, no odour	High EC, pH, and turbidity with low DO are due to runoff accumulating in the sediment basin. Water was taken for treatment at the process water treatment plant or re-use where parameters where met.
4/11/2024, 3:07 pm	EPL86	LHG01 Basin	22.18	90.2	7.83	1250	802	7.92	62	126	Sunny day, turbid water, no odour	High EC and pH are due to runoff accumulating in the sediment basin. Water was taken for treatment at the process water treatment plant or re-use where parameters where met.

Table 2 - Reservoir Water Quality Data
Talbingo and Tantangara Reservoirs

	Water Quality Objectives (see note 2)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	90 - 110	-	20 - 30	-	6.5 - 8.0	-	1 - 20

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
3/11/2024, 8:39 am	EPL10	Talbingo Reservoir, downstream of road works and upstream of water intake point	19.15	93.6	8.66	78	51	7.44	105	1.5	Clear, no odours, no algal bloom	Low Turbidity is generally consistent with the baseline data for this location. EC is consistent with background conditions in the Yarrangobilly River for November 2024.
3/11/2024, 8:28 am	EPL11	Talbingo Reservoir, downstream of outlet	18.97	88.1	8.18	70	45	6.74	135	1.3	Clear, no odours, no algal growth	Low DO is being monitored to ensure variance is attributed to natural fluctuations. EC is consistent with background conditions in the Yarrangobilly River for November 2024.
26/11/2024, 8:06 am	EPL28	Tantangara Reservoir, upstream of works in the mouth of the Murrumbidgee River	19.5	88.2	8.09	25.8	19	9.51	144.4	7.67	Overcast, slight breeze. Water level at 0.6m, turbid with sediment stirred up; organic material and algae present; no odour or oily sheen.	Elevated pH levels, likely resulting from decreased water levels and increased organic matter, were observed. These locations will be closely monitored during the next sampling round. Low DO remains with the historical data.
26/11/2024, 8:42 am	EPL29	Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River	20.3	94	8.5	22	16	9.69	203.2	4.33	Overcast, windy. Water level at 14.2m, choppy; organic material present; no odour or oily sheen.	Elevated pH levels, likely resulting from decreased water levels and increased organic matter, were observed. These locations will be closely monitored during the next sampling round.
26/11/2024, 8:37 am	EPL32	Tantangara Reservoir, Tantangara Intake. Downstream of construction works	20.4	93.7	8.46	22.1	16	10.11	182.2	4.38	Cloudy, wind picking up. Water level at 11.5m; choppy; organic material present; no odour or oily sheen.	Elevated pH levels, likely resulting from decreased water levels and increased organic matter, were observed. These locations will be closely monitored during the next sampling round.
16/11/2024, 12:20 pm	EPL38	Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities	19.01	89	8.25	25	16	6.59	190	8.6	Sunny day, very clear water, no odour	Low DO remains with the historical data.
16/11/2024, 10:51 am	EPL39	Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works	18.56	74	6.92	26	17	7.25	155	3.9	Sunny day, clear water, no odour, high flow	Low DO and EC are consistent with background conditions and low reservoir water levels for November 2024.
4/11/2024, 12:20 pm	EPL40	Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works	14.9	95.5	9.65	20	16	7.6	168	3.95	Overcast, windy. Water, fast flowing, relatively clear with organic material present; no odour or oily sheen.	All readings are within WQO limits.
26/11/2024, 8:52 am	EPL 46	Tantangara Reservoir, diffuser outlet discharging into Tantangara Reservoir from Tantangara STP/PWTP	20.3	94.5	854	23.1	17	9.8	197.6	4.39	Cloudy, windy. Water level at 4.6m, choppy; organic material present; no odour or oily sheen.	Elevated pH levels, likely resulting from decreased water levels and increased organic matter, were observed.
26/11/2024, 8:47 am	EPL 51	Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet	20.3	94	8.49	22.1	16	9.83	194.8	4.24	Cloudy, windy. Water level at 12.7m; choppy; organic material and algae present; no odour or oily sheen.	Elevated pH levels, likely resulting from decreased water levels and increased organic matter, were observed.

Table 3 - Treated Water Quality Data
Talbingo

	Water Quality Objectives (see note 3)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	-	-	700	-	6.5 - 8.0	-	25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
17/11/2024, 9:33 am	EPL41	Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir.	24.32	80.5	6.73	24	16	8.72	118	4.7	Clear, no odour, plant running prior to sample	pH readings will be closely monitored.

Table 4 - Treated Water Quality Data
Tantangara

	Water Quality Objectives (see note 3)							
	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
	-	-	-	200	-	6.5 - 8.0	-	25

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
27/11/2024, 1:34 pm	EPL50	Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir.	18.9	88.7	8.25	158.4	117	8.98	223.6	9.48	Water clear; no odour or oily sheen.	pH readings will be closely monitored.

Table 5 - Groundwater Quality Data
GF01 Surface Water and Groundwater

Water Quality Objectives (see note 1)							
Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)
-	-	-	30 - 350	-	6.5 - 8.0	-	-

Date and Time	EPL Site ID	Location Description	Temp (°C)	DO (%)	DO (mg/L)	EC (µS/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Field Comments	Context
4/11/2024, 10:30 am	EPL1	Wallace Creek Bridge	16.03	41.4	4.08	460	299	6.68	-31	20.1	SWL- 3.71m, turbid water, organic material smell	Elevated EC is within the historical range for this location.
4/11/2024, 10:42 am	EPL2	Wallace Creek Bridge	18.07	35.9	3.39	519	333	7.55	-122	387	SWL- 3.64 m, sunny day, sediment emplacement in the bottom, stinky odour, turbid water	Elevated EC is within the historical range for this location.
17/11/2024, 9:24 am	EPL4	Portal Access	17.77	11.5	1.09	1320	842	7.16	-110	1000	SWL 2.70m Cloudy day Borehole under submerged water mud from previous rain events. Turbidity greater than 1000 NTU. HORIBA MAX OUT.	Elevated EC is within the historical range for this location.
4/11/2024, 10:09 am	EPL25	Portal Access	16.45	15.4	1.5	502	321	6.31	-3	96.8	SWL- 3.71 m, sunny day, turbid water, organic material smell	Elevated EC and low pH is within the historical range for this location.
5/11/2024, 10:48 am	EPL56	GF01 groundwater upstream east	16.44	29.2	2.86	287	186	8.02	59	65.7	SWL- 10.5 m, sunny day, turbid water, no odour	Marginal pH exceedence.
5/11/2024, 11:05 am	EPL57	GF01 groundwater upstream west	18.83	41.9	3.94	269	175	8.2	61	80.2	SWL- 15.07 m, sunny day, turbid water, no odour	This location is upstream of works and is therefore representative of background conditions.
5/11/2024, 12:14 pm	EPL58	GF01 groundwater downstream	17.35	17.6	1.69	902	578	6.06	85	20.9	SWL- 6.77 m, sunny day, turbid water, no odour	Elevated EC is generally consistent with historical range for this location. Low pH will be monitored.
2/11/2024, 11:52 am	EPL68	Tantangara groundwater downstream West	13.1	90.2	9.48	9.6	8	6.24	257.4	3.36	Sunny, windy, 18 degrees ambient temperature. Water clear with no odour or oily sheen. SWL 4.55m, Depth 9.74m	Low pH and EC are generally consistent with previous results in the last months. These conditions are following expected changes due to altered climatic conditions.
2/11/2024, 12:11 pm	EPL69	Tantangara groundwater downstream East	13.3	87.7	9.19	19.7	16	6.17	277.9	7.49	Sunny, windy, 18 degrees ambient temperature. Water relatively clear with some sediment present at bottom of sleeve; no odour or oily sheen. SWL 2.31m, Depth 6.97m	Low pH and EC are generally consistent with previous results in the last months. These conditions are following expected changes due to altered climatic conditions.
2/11/2024, 1:06 pm	EPL70	Tantangara groundwater upstream	15.4	63.5	6.35	65	52	6.07	292.1	22.55	Sunny, windy, 18 degrees ambient temperature. Water relatively clear with some sediment pr	This location is upstream of works and is therefore representative of background conditions.
8/11/2024, 11:31 am	EPL 72	Marica groundwater upstream	11.37	40.2	4.39	61	40	6.18	79	188	Cloudy SWL 35.24m Clear water Hydrasleeve in	This location is upstream of works and is therefore representative of background conditions.
8/11/2024, 10:55 am	EPL73	Marica groundwater downstream	11.89	55.8	6.02	72	47	6.67	105	88.3	SWL 13.01m Cloudy Clear water low turbidity Hydrasleeve in	All readings are within WQO limits.
6/11/2024, 2:32 pm	EPL80	LHG groundwater upstream	19.27	22.5	2.07	892	571	6.88	-31	134	SWL- 19.43 m, turbid water, no odour	This location is upstream of works and is therefore representative of background conditions.
6/11/2024, 1:22 pm	EPL81	LHG groundwater downstream	17.98	17.2	1.62	794	508	6.83	-87	223	SWL- 3.49 m, turbid water, no odour	Elevated EC is consistent with background conditions in November 2024.
6/11/2024, 2:48 pm	EPL82	MY groundwater upstream	18.93	17.1	1.3	2640	1690	6.75	-68	120	SWL- 8.40 m, turbid water, no odour	This location is upstream of works and is therefore representative of background conditions.
6/11/2024, 1:40 pm	EPL83	MY groundwater downstream	17.46	39.3	3.76	698	447	7.27	-96	1000	SWL- 3.62 m, turbid water, no odour	Elevated pH will be monitored.
6/11/2024, 1:06 pm	EPL87	MY groundwater downstream	16.78	64.9	6.29	442	287	6.44	92	1000	SWL- 3.92 m,turbid water, no odour	Low pH aligned with the historical data for this location in November t 2024.
6/11/2024, 1:37 pm	EPL88	MY groundwater downstream	18.6	50	4.67	827	529	7.05	-170	5.8	SWL- 3.21 m, turbid water, no odour	Elevated EC will be monitored.
6/11/2024, 2:10 pm	EPL89	LHG groundwater downstream	6.69	14.6	1.41	367	239	6.69	-9	128	SWL- 3.14 m, turbid water, no odour	Marginal EC exceedence.
5/11/2024, 12:22 pm	EPL 90	GF01 groundwater downstream	17.73	34.8	3.32	85	55	5.67	93	340	SWL- 13.94 m, sunny day, turbid water, no odour	Low pH is not consistent with up gradient conditions or conditions in GF01 but appears consistent with other downstream wells and will be monitored.
5/11/2024, 12:41 pm	EPL 91	GF01 groundwater downstream	18.47	0	0	250	163	6.46	44	23.9	SWL- 9.27 m, sunny day, turbid water, no odour	pH is marginally low.
5/11/2024, 11:24 am	EPL 92	GF01 groundwater downstream	17.82	47.3	4.48	150	98	7.31	82	229	SWL- 14.10 m, sunny day, turbid water, no odour	All readings are within WQO limits.
5/11/2024, 11:31 am	EPL 93	GF01 groundwater downstream	17.42	17.1	1.64	262	170	7.18	62	162	SWL- 14.68 m, sunny day, turbid water, no odour	All readings are within WQO limits.
5/11/2024, 11:46 am	EPL 94	GF01 groundwater downstream	17.02	24.6	2.38	182	118	6.74	-67	84.7	SWL- 13.59 m, sunny day, turbid water, no odour	All readings are within WQO limits.
5/11/2024, 12:07 pm	EPL 95	GF01 groundwater downstream	18.08	0.4	0.04	525	336	5.98	81	109	SWL- 7.21 m, sunny day, turbid water, no odour	Low pH is not consistent with up gradient conditions or conditions in GF01 but appears consistent with other downstream wells and will be monitored.
5/11/2024, 11:56 am	EPL 96	GF01 groundwater downstream	18.01	80.6	7.6	1100	703	6.94	5	370	SWL- 5.04 m, sunny day, turbid water, no odour	EC is elevated more than other ground and surface water locations in GF01, inclusive of the leachate basin. The top of bore casing is open and may be a contributing factor to elevated levels. This will be closely monitored and a permanent pump for extraction be set up for this location to enable treatment of water if required.
5/11/2024, 12:33 pm	EPL 97	GF01 groundwater downstream	17.64	0	0	429	279	6.27	86	36.4	SWL- 6.43, sunny day, turbid water, no odour	Elevated EC and low pH will be monitored.

Note 1: Water Quality Objective values for the Yarrangobilly River and Minor Watercourses refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) that are reported in Tables 3.3.2 and 3.3.3 of ANZECC/ ARMCANZ (2000).

Note 2: Water Quality Objective values for Talbingo Reservoir are the default trigger values for physical and chemical stressors in south-east Australia (freshwater lakes and reservoirs) that are reported in Tables 3.3.2 and 3.3.3 of ANZECC/ ARMCANZ (2000).

Note 3: Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

Note 4: Water Quality Objective values for groundwater reference the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for pH and electrical conductivity.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01-30 Nov 2024 Groundwater

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL1	EPL2	EPL4	EPL25	EPL56	EPL57	EPL58	EPL68	EPL69	EPL70	EPL72	EPL73	EPL80	EPL81	EPL82	EPL83	EPL87	EPL88	EPL89	EPL 90	EPL 91	EPL92	EPL93	EPL94	EPL95	EPL96	EPL97
Physiochemical				4/11/24	4/11/24	17/11/24	4/11/24	5/11/24	5/11/24	5/11/24	45598	45598	45598	45604	45604	45602	45602	45602	45602	45602	45602	45602	45601	45601	45601	45601	45601	45601	45601	45601
pH	pH Unit	-	6.5-8	6.68	7.55	7.16	6.31	8.02	8.2	6.06	6.24	6.17	6.07	6.18	6.67	6.88	6.83	6.75	7.27	6.44	7.05	6.69	5.67	6.46	7.31	7.18	6.74	5.98	6.94	6.27
Electrical Conductivity	µS/cm	-	30-350	460	519	1320	502	287	269	902	9.6	19.7	65	61	61	892	704	2640	698	442	827	367	85	250	150	262	182	525	1100	429
Oxidation Reduction Potential	mV	-	No Water Quality Objective Value	-31	-122	-110	-3	59	61	85	257.4	277.9	292.1	79	105	-31	-87	-68	-96	92	-170	-9	93	44	82	62	-67	81	5	86
Temperature	°C	-	No Water Quality Objective Value	16.03	18.07	17.77	16.45	16.44	18.83	17.35	13.1	13.3	15.4	11.37	11.89	19.27	17.98	18.93	17.46	16.78	18.6	6.69	17.73	18.47	17.82	17.42	17.02	18.08	18.01	17.64
Dissolved Oxygen	% saturation	-	No Water Quality Objective Value	41.4	35.9	11.5	15.4	29.2	41.9	17.6	90.2	87.7	63.5	40.2	40.2	22.5	17.2	17.1	39.3	64.9	50	14.6	34.8	0	47.3	17.1	24.6	0.4	80.6	0
Turbidity	NTU	-	No Water Quality Objective Value	20.1	387	1000	96.8	65.7	80.2	20.9	3.36	7.49	22.55	188	88.3	134	223	120	1000	1000	5.8	128	340	23.9	229	162	84.7	109	370	36.4
Laboratory analytes																														
TSS	mg/L	5	No Water Quality Objective Value	66	181	3,350	98	38	61	71	12	<5	16	174	34	18	31	479	975	7,410	<5	30	1,060	72	438	182	109	133	367	131
Hardness as CaCO3	mg/L	1	No Water Quality Objective Value	256	133	213	219	120	112	292	7	2	17	13	22	377	398	1,200	109	108	131	78	8	113	42	117	76	176	443	136
Nutrients																														
Ammonia as N	µg/L	10	13	20	80	540	180	<10	<10	<10	70	40	30	20	20	20	40	40	70	130	300	<10	<10	<10	<10	10	<10	<10	<10	<10
Nitrite + Nitrate as N (NOx)	µg/L	10	15	30	40	23,200	<10	20	410	32,700	840	140	500	20	20	<10	<10	<10	2,000	4,470	<10	60	210	140	30	<10	<10	14,700	19,300	190
Kjeldahl Nitrogen Total	µg/L	100	No Water Quality Objective Value	<100	200	6,200	300	<100	<100	2,600	200	100	200	100	100	200	100	200	500	4,600	1,600	200	4,000	500	400	<100	<100	3,800	2,400	<100
Nitrogen (Total)	µg/L	100	250	<100	200	29,400	300	<100	400	35,300	1,000	200	700	100	100	200	100	200	2,500	9,100	1,600	300	4,200	600	400	<100	<100	18,500	21,700	200
Reactive Phosphorus	µg/L	1	15	4	34	13	3	3	11	2	<1	3	16	15	9	5	5	4	12	5	7	6	4	6	4	38	4	5	3	8
Phosphorus (Total)	µg/L	10	20	70	70	2,040	100	40	40	40	<10	20	20	40	10	80	110	90	210	2,540	220	10	1,290	80	90	90	30	50	150	60
Inorganics																														
Cyanide Total	µg/L	4	4	-	-	-	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons																														
Oil and Grease	mg/L	1	5	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals																														
Aluminium (total)	µg/L	5	No Water Quality Objective Value	-	-	-	-	964	1,340	833	454	764	1,560	3670	557	58	582	1,510	19,100	377,000	62	406	13,700	658	5,080	3,490	1,920	1,990	5,650	1,310
Aluminium (dissolved)	µg/L	5	27	<5	<5	<5	<5	<5	<5	<5	<5	17	<5	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Arsenic (total)	µg/L	0.2	No Water Quality Objective Value	-	-	-	-	0.5	2.7	1.3	<0.2	0.2	0.3	2	0.6	198	30.0	58.2	46.4	74.4	23.2	0.5	6.4	4.0	5.3	20.4	14.4	9.0	8.0	3.0
Arsenic (dissolved)	µg/L	0.2	0.8	1.0	1.6	4.3	1.0	0.2	1.9	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	2.2	4.4	0.6	2.0	<0.2	3.9	0.2	<0.2	0.5	0.2	9.4	0.4	0.9	0.2	0.5
Chromium (III+VI) (total)	µg/L	0.2	No Water Quality Objective Value	-	-	-	-	2.9	8.1	3.5	0.9	0.8	3.1	9.5	0.9	1.4	1.0	2.9	83.9	668	0.5	0.7	35.6	2.0	9.0	8.8	5.2	6.4	15.8	3.8
Chromium (III+VI) (dissolved)	µg/L	0.2	0.01	<0.2	0.2	0.5	<0.2	<0.2	<0.2	0.8	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	27.3	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2
Copper (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	80.6	38.8	1.9	8.3	1.6	276	103	2.3	1.6	1.1	0.9	78.6	367	17.5	18.2	34.4	1.0	11.7	4.1	3.2	19.1	14.3	1.5
Copper (dissolved)	µg/L	0.5	1	1.5	9.6	7.4	6.0	9.3	1.8	<0.5	4.5	<0.5	13.2	64.3	0.6	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	5.0	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5
Iron (total)	µg/L	2	No Water Quality Objective Value	-	-	-	-	1,140	1,470	1,420	224	442	1,060	4660	434	9,780	3,420	7,290	28,100	250,000	915	419	19,700	1,680	5,710	5,100	5,390	3,360	11,800	2,150
Iron (dissolved)	µg/L	2	300	16	<2	4	<2	<2	<2	<2	<2	13	<2	<2	<2	<2	<2	98	<2	<2	11	<2	<2	<2	<2	<2	<2	<2	<2	<2
Lead (total)	µg/L	0.1	No Water Quality Objective Value	-	-	-	-	6.2	4.0	9.4	0.2	0.4	1.2	11.9	0.9	0.8	0.8	4.2	28.8	369	0.2	0.3	76.0	5.4	2.70	14.1	9.4	15.1	74.3	20.3
Lead (dissolved)	µg/L	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1
Manganese (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	78.8	168	174	12.6	18.2	40.3	1350	250	226	196	445	828	4,060	254	7.3	771	661	500	266	697	650	788	586
Manganese (dissolved)	µg/L	0.5	1,200	239	102	536	1,090	21.1	51.2	138	2.4	<0.5	2.9	7.3	16.1	190	175	391	1.6	37.0	190	2.9	13.4	30.1	80.6	105	546	468	1.6	431
Nickel (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	3.0	5.0	6.0	1.4	0.7	5.3	1.4	0.7	24.9	4.5	6.1	81.9	758	5.7	4.4	65.8	2.7	16.1	14.5	8.9	18.5	34.0	9.8
Nickel (dissolved)	µg/L	0.5	8	2.2	5.8	3.3	4.2	<0.5	<0.5	2.9	0.6	<0.5	<0.5	0.3	<0.5	18.2	2.6	2.0	2.6	1.8	3.8	2.8	2.6	<0.5	3.3	0.9	1.5	10.4	3.0	4.2
Silver (total)	µg/L	0.01	No Water Quality Objective Value	-	-	-	-	0.02	0.01	0.04	0.01	<0.01	<0.01	0.03	0.04	<0.01	<0.01	<0.01	0.38	1.33	<0.01	<0.01	0.12	0.01	0.13	0.04	0.03	0.05	0.12	0.02
Silver (dissolved)	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (total)	µg/L	1	No Water Quality Objective Value	-	-	-	-	15	11	16	4	3	4	22	9	7	5	23	132	1,340	4	2	183	19	86	42	131	50	83	179
Zinc (dissolved)	µg/L	1	2.4	2	1	<1	17	3	<1	7	3	1	2	9	8	<1	<1	4	<1	<1	<1	<1	11	2	20	<1	5	32	3	59

* Water Quality Objective values for groundwater refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for the protection of 99% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

\- Sample not required at this location.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01 - 30 Nov 2024 - Talbingo and Tantangara Reservoir

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL10	EPL11	EPL28	EPL29	EPL32	EPL38	EPL39	EPL40	EPL46	EPL51
Field				3/11/24	3/11/24	26/11/24	26/11/24	26/11/24	16/11/24	16/11/24	4/11/24	26/11/24	26/11/24
pH	**pH Unit**	-	6.5-8	7.44	6.74	9.51	9.69	10.11	6.59	7.25	7.6	9.8	9.83
Electrical Conductivity	**µS/cm**	-	20-30	78	70	25.8	22	22.1	25	26	20	23.1	22.1
Oxidation Reduction Potential	**mV**	-	No Water Quality Objective Value	105	135	144.4	203.2	182.2	190	155	168	197.6	194.8
Temperature	**°C**	-	No Water Quality Objective Value	19.15	18.97	19.5	20.3	20.4	19.01	18.56	14.9	20.3	20.3
Dissolved Oxygen	**% saturation**	-	90-110	93.6	88.1	88.2	94	93.7	89	74	95.5	94.5	94
Turbidity	**NTU**	-	1-20	1.5	1.3	7.67	4.33	4.38	8.6	3.9	3.95	4.39	4.24
Laboratory analytes													
Total suspended solids	**mg/L**	5	No Water Quality Objective Value	<5	<5	16	11	9	8	6	<5	<5	<5
Hardness as $CaCO_3$ (filtered)	**mg/L**	1	No Water Quality Objective Value	31	28	9	2	2	2	<1	2	2	2
Nutrients													
Ammonia as N	**µg/L**	10	10	<10	30	60	90	40	20	<10	20	20	60
Nitrite + Nitrate as N (NOx)	**µg/L**	10	10	10	40	10	15	18	26	20	<10	20	14
Kjeldahl Nitrogen Total	**µg/L**	100	No Water Quality Objective Value	200	200	500	400	200	200	200	100	300	300
Nitrogen (Total)	**µg/L**	100	350	200	200	500	400	200	200	200	100	300	300
Reactive Phosphorus	**µg/L**	1	5	4	5	4	3	3	7	2	5	3	4
Phosphorus (Total)	**µg/L**	10	10	20	30	40	20	10	40	20	<10	30	20
Inorganics													
Cyanide Total	**µg/L**	4	7	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Hydrocarbons													
Oil and Grease	**mg/L**	1	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Metals													
Aluminium (dissolved)	**µg/L**	5	55	10	8	<5	<5	<5	49	18	15	37	39
Arsenic (dissolved)	**µg/L**	0.2	13	0.3	0.3	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2
Chromium (III+VI) (dissolved)	**µg/L**	0.2	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2
Copper (dissolved)	**µg/L**	0.5	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iron (dissolved)	**µg/L**	2	300	30	23	3	3	<2	152	78	37	115	114
Lead (dissolved)	**µg/L**	0.1	3.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Manganese (dissolved)	**µg/L**	0.5	1,900	0.6	<0.5	24.5	2.4	1.3	72.2	3.6	5.2	2.3	2.3
Nickel (dissolved)	**µg/L**	0.5	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver (dissolved)	**µg/L**	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (dissolved)	**µg/L**	1	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Biological													
Faecal Coliforms	**CFU/100mL**	1	10/100^	5	1		-	-	-	-	-	-	7
Biochemical Oxygen Demand	**mg/L**	2	1/5^	4	4		-	-	-	-	-	-	<2

* Water Quality Objective values for Talbingo and Tantangara Reservoir refer to the default trigger values for physical and chemical stressors in south-east Australia (fresh lakes and reservoirs) for the protection of 95% of aquatic species ANZECC / ARMCANZ (2000), they are not pollutant limits imposed by EPL 21266.

^ 90th percentile concentration limits / 100 percentile concentration limits

\- Sample not required at this location.

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01 - 30 Nov 2024 - Surface Water

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL5	EPL6	EPL8	EPL9	EPL12	EPL14	EPL15	EPL16	EPL24	EPL26	EPL27	EPL30	EPL31	EPL33	EPL34	EPL35	EPL36	EPL37	EPL52	EPL53	EPL54	EPL55	EPL67	EPL71	EPL84	EPL85	EPL86
Field				45599	45599	45599	45599	45599	45599	45599	45599	45600	45597	45597	45598	45598	45598	45598	45598	45605	45605	45601	Dry	Dry	Dry	45612	45597	45600	45600	45600
pH	-	-	6.5-8	7.64	7.47	7.85	7.91	7.65	7.95	7.93	7.89	6.58	6.83	6.61	6.09	6.24	6.5	7.85	7.48	6.95	7.24	8.47	Dry	Dry	Dry	7.41	6.29	8.3	10.45	7.92
Electrical Conductivity	µS/cm	-	30-350	100	74	107	102	100	97	96	107	655	37	48	29	25	24	34	22	61	75	965	Dry	Dry	Dry	22	71	1530	695	1250
Oxidation Reduction Potential	mV	-	No Water Quality Objective Value	52	99	93	95	88	88	91	89	72	164	165	186	178	158	109	112	85	60	-10	Dry	Dry	Dry	155	271	57	-2	62
Temperature	°C	-	No Water Quality Objective Value	20.33	18.79	21.85	21.72	20.41	22.84	21.2	22.54	14.58	15.16	16.44	12.86	12.97	14.36	13.2	12.72	15.03	16.75	21.2	Dry	Dry	Dry	18.16	12.93	23.4	21.77	22.18
Dissolved Oxygen	% saturation	-	90-110	109.4	107.8	90.2	92.6	100.7	102.2	105.4	94.2	66.3	92.7	77	80.6	81	91.4	99.1	99.7	82.8	85.7	90.6	Dry	Dry	Dry	78.8	65.4	162.8	64.8	90.2
Turbidity	NTU	-	2-25	2.04	2.48	1.83	3.61	1.89	1.87	1.28	4.9	0	0	0	2.9	2.4	4.2	1.3	0.2	69.3	57.8	66.8	Dry	Dry	Dry	4	20.4	1000	93.9	126
Laboratory analytes																														
TSS	mg/L	5	No Water Quality Objective Value	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7	14	21	Dry	Dry	Dry	<5	<5	426	6	24
Hardness as CaCO3	mg/L	1	No Water Quality Objective Value	46	31	46	43	46	43	43	43	184	12	9	7	9	2	<1	<1	24	24	233	Dry	Dry	Dry	<1	16	18	32	280
Nutrients																														
Ammonia as N	µg/L	10	13	<10	<10	<10	<10	<10	10	10	<10	<10	10	<10	<10	<10	40	<10	<10	<10	20	<10	Dry	Dry	Dry	10	<10	1,220	150	<10
Nitrite + Nitrate as N (NOx)	µg/L	10	15	<10	<10	10	10	<10	<10	<10	10	16,600	<10	30	<10	<10	20	<10	<10	70	40	18,500	Dry	Dry	Dry	<10	<10	6,030	4,670	18,200
Kjeldahl Nitrogen Total	µg/L	100	No Water Quality Objective Value	<100	100	<100	100	100	200	100	<100	1,100	<100	100	100	100	300	200	200	300	400	2800	Dry	Dry	Dry	100	100	4,400	1,400	2,600
Nitrogen (Total)	µg/L	100	250	<100	100	<100	100	100	200	100	<100	17,700	<100	100	100	100	300	200	200	400	400	21300	Dry	Dry	Dry	100	100	10,400	6,100	20,800
Reactive Phosphorus	µg/L	1	15	9	9	6	6	6	9	7	5	5	4	2	7	7	4	2	1	6	9	3	Dry	Dry	Dry	2	6	31	15	7
Phosphorus (Total)	µg/L	10	20	20	50	80	50	50	60	60	40	20	20	30	20	20	20	10	30	30	50	60	Dry	Dry	Dry	20	90	270	60	40
Inorganics																														
Cyanide Total	µg/L	4	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	Dry	Dry	Dry	<4	<4	<4	<4	<4
Hydrocarbons																														
Oil and Grease	mg/L	1	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Dry	Dry	Dry	<1.0	<1.0	18.7	<1.0	<1.0
Metals																														
Aluminium (total)	µg/L	5	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	879	Dry	Dry	Dry	152	708	18,000	917	784
Aluminium (dissolved)	µg/L	5	27	8	<5	7	10	8	9	9	8	<5	6	<5	12	14	29	19	18	17	30	10	Dry	Dry	Dry	19	11	15	212	5
Arsenic (total)	µg/L	0.2	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	Dry	Dry	Dry	0.2	0.5	17.3	1.5	3.7
Arsenic (dissolved)	µg/L	0.2	0.8	0.3	<0.2	0.3	0.3	0.2	0.3	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	0.4	0.6	5.2	Dry	Dry	Dry	<0.2	0.3	11.6	1.2	3.0
Chromium (III+VI) (total)	µg/L	0.2	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.6	Dry	Dry	Dry	0.3	1.3	171	195	7.3
Chromium (III+VI) (dissolved)	µg/L	0.2	0.01	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.3	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	8.5	Dry	Dry	Dry	<0.2	<0.2	117	182	5.4
Copper (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1	Dry	Dry	Dry	<0.5	1.1	32.4	1.2	3.1
Copper (dissolved)	µg/L	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	Dry	Dry	Dry	<0.5	<0.5	2.6	0.5	1.2
Iron (total)	µg/L	2	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	944	Dry	Dry	Dry	247	654	24,300	494	818
Iron (dissolved)	µg/L	2	300	9	6	8	9	8	9	8	8	<2	12	11	26	20	95	77	76	188	278	<2	Dry	Dry	Dry	77	22	11	3	<2
Lead (total)	µg/L	0.1	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	Dry	Dry	Dry	0.1	0.2	38.6	0.6	1.2
Lead (dissolved)	µg/L	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Dry	Dry	Dry	<0.1	<0.1	<0.1	<0.1	<0.1
Manganese (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.0	Dry	Dry	Dry	5.4	14.4	557	11.4	38.7
Manganese (dissolved)	µg/L	0.5	1,200	1.4	2.2	1.4	3.5	1.0	1.2	1.2	1.9	131	2.4	0.8	2.5	2.0	36.6	3.7	3.9	41.8	40.4	<0.5	Dry	Dry	Dry	3.5	6.8	<0.5	<0.5	<0.5
Nickel (total)	µg/L	0.5	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	Dry	Dry	Dry	<0.5	2.5	73.9	1.6	2.8
Nickel (dissolved)	µg/L	0.5	8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.8	<0.5	Dry	Dry	Dry	<0.5	0.7	1.5	<0.5	1.0
Silver (total)	µg/L	0.01	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	Dry	Dry	Dry	<0.01	<0.01	0.06	<0.01	<0.01
Silver (dissolved)	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Dry	Dry	Dry	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (total)	µg/L	1	No Water Quality Objective Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	Dry	Dry	Dry	<1	2	135	3	4
Zinc (dissolved)	µg/L	1	2.4	2	<1	<1	<1	<1	<1	1	<1	6	<1	1	<1	1	<1	2	<1	<1	<1	<1	Dry	Dry	Dry	<1	1	<1	<1	<1

* Water Quality Objective values for surface water refer to the default trigger values for physical and chemical stressors in south-east Australia (upland rivers) for the protection of 99% of aquatic species ANZECC / ARMCANZ (2018), they are not pollutant limits imposed by EPL 21266.

\- Samples not required

Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 01 - 30 Nov 2024 - Treated Water

Analyte	Unit	Limit of Reporting	Water Quality Objective Value*	EPL 41	EPL 43	EPL 44	EPL 45	EPL 47	EPL 48	EPL 49	EPL 50
Flow Rate				17/11/2024							27/11/2024
Inflow#	ML/day	-	-	-	0.0000	0.4957	0.0511	0.1865	0.0791	0.5600	-
Outflow#	ML/day	-	4.32 (EPL 43 / 50)	-	-	-	-	-	-	-	-
Field											
pH	pH Unit	-	6.5-8.5	8.72	-	-	-	-	-	-	8.98
Electrical Conductivity	µS/cm	-	700 (EPL 41) / 200 (EPL 50)	24	-	-	-	-	-	-	158.4
Oxidation Reduction Potential	mV	-	No Water Quality Objective Value	118	-	-	-	-	-	-	223.6
Temperature	°C	-	15	24.32	-	-	-	-	-	-	18.9
Dissolved Oxygen	% saturation	-	No Water Quality Objective Value	80.5	-	-	-	-	-	-	88.7
Turbidity	NTU	-	<25	4.7	-	-	-	-	-	-	9.48
Laboratory analytes											
Total suspended solids	mg/L	5	5/10	<5							<5
Hardness as $CaCO_3$ (filtered)	mg/L	1	No Water Quality Objective Value	<1							2
Nutrients											
Ammonia as N	µg/L	10	200/2000^	70	-	-	-	-	-	-	60
Kjeldahl Nitrogen Total	µg/L	100	No Water Quality Objective Value	100	-	-	-	-	-	-	300
Nitrogen (Total)	µg/L	100	350/-^	300	-	-	-	-	-	-	300
Reactive Phosphorus	µg/L	1	No Water Quality Objective Value	<1	-	-	-	-	-	-	4
Phosphorus (Total)	µg/L	10	100/300^	40	-	-	-	-	-	-	20
Inorganics											
Cyanide Total	µg/L	4	No Water Quality Objective Value	<4	-	-	-	-	-	-	<4
Hydrocarbons											
Oil and Grease	mg/L	1	2/5^	<1.0	-	-	-	-	-	-	<1.0
Metals											
Aluminium (dissolved)	µg/L	5	55	<5	-	-	-	-	-	-	39
Arsenic (dissolved)	µg/L	0.2	13	<0.2	-	-	-	-	-	-	<0.2
Chromium (III+VI) (dissolved)	µg/L	0.2	1	0.3	-	-	-	-	-	-	<0.2
Copper (dissolved)	µg/L	0.5	14	<0.5	-	-	-	-	-	-	<0.5
Iron (dissolved)	µg/L	2	300	<2	-	-	-	-	-	-	114
Lead (dissolved)	µg/L	0.1	3.4	<0.1	-	-	-	-	-	-	<0.1
Manganese (dissolved)	µg/L	0.5	1,900	<0.5	-	-	-	-	-	-	2.3
Nickel (dissolved)	µg/L	0.5	11	<0.5	-	-	-	-	-	-	<0.5
Silver (dissolved)	µg/L	0.01	0.05	<0.01	-	-	-	-	-	-	<0.01
Zinc (dissolved)	µg/L	1	8	<1	-	-	-	-	-	-	<1
Biological											
Faecal Coliforms	CFU/100mL	1	10/100^	<1	-	-	-	-	-	-	<1
Biological Oxygen Demand	mg/L	2	5	<2	-	-	-	-	-	-	<2

Note: Treated water was not being discharged at Talbingo Reservoir at the time of EPL sampling.
There is no 100th percentile limit for Nitrogen (Total).

* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

\- Samples not required

^ 90 Percentile concentration limit/100 Percentile limit

\# Inflows to STP and CWTP do not directly correspond to outflow at RO as much of the water is reused on site

Snowy Hydro 2.0 Main Works
Monthly EPL Sampling: 01 - 30 Nov 2024 - Treated Water

Date	EPL 43 *	EPL 50 ^	EPL 44	EPL 45	EPL 47	EPL 48	EPL 49
	Discharge volume (Megalitres)		Discharge volume (Megalitres)				
1/11/2024	-	-	0.23	0.05	0.12	0.09	0.51
2/11/2024	-	-	0.46	0.05	0.19	0.09	0.47
3/11/2024	-	-	0.54	0.04	0.20	0.08	0.46
4/11/2024	-	-	0.37	0.04	0.10	0.08	0.48
5/11/2024	-	-	0.45	0.03	0.31	0.08	0.58
6/11/2024	-	-	0.71	0.04	0.15	0.08	0.65
7/11/2024	-	-	0.46	0.06	0.21	0.07	0.58
8/11/2024	-	-	0.47	0.04	0.13	0.08	0.48
9/11/2024	-	-	0.42	0.05	0.17	0.08	0.56
10/11/2024	-	-	0.87	0.06	0.20	0.04	0.59
11/11/2024	-	-	0.40	0.06	0.15	0.11	0.63
12/11/2024	-	-	0.43	0.06	0.17	0.07	0.34
13/11/2024	-	-	0.64	0.03	0.17	0.06	0.49
14/11/2024	-	-	0.39	0.03	0.21	0.07	0.43
15/11/2024	-	-	0.58	0.15	0.25	0.07	0.43
16/11/2024	-	-	0.43	0.06	0.18	0.08	0.58
17/11/2024	-	-	0.46	0.06	0.21	0.10	0.42
18/11/2024	-	-	0.59	0.04	0.19	0.05	0.40
19/11/2024	-	-	0.46	0.05	0.20	0.11	0.64
20/11/2024	-	-	0.43	0.05	0.14	0.07	0.76
21/11/2024	-	-	0.50	0.05	0.25	0.07	0.24
22/11/2024	-	-	0.67	0.05	0.15	0.09	0.94
23/11/2024	-	-	0.63	0.06	0.18	0.06	0.63
24/11/2024	-	-	0.14	0.04	0.19	0.13	0.54
25/11/2024	-	-	0.72	0.04	0.17	0.09	0.53
26/11/2024	-	-	0.54	0.06	0.20	0.09	0.91
27/11/2024	-	-	0.54	0.04	0.16	0.09	0.83
28/11/2024	0.03	-	0.54	0.05	0.28	0.03	0.65
29/11/2024	-	-	0.54	0.02	0.18	0.08	0.63
30/11/2024	-	-	0.26	0.04	0.19	0.09	0.45

\- Water not discharged on this day

Note: The EPL discharge volume limit for EPL 43 and 50 is 4.32 megalitres per day. Compliance with this criteria was met during the reporting month.

* The maximum flow rate capacity for Lobs Hole STP/PWTP during the reporting month was 1.85 L/s

^ The maximum flow rate capacity for Tantangara STP/PWTP during the reporting month was 4.51 L/s

-- Water not discharged on this day