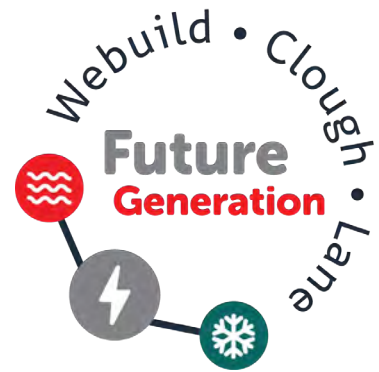




## REPORT

# EPL 21266 – BI-ANNUAL MONITORING REPORT JUNE 2022 – NOVEMBER 2022

S2-FGJV-ENV-REP-0070

Rev A

JANUARY 2023

### ABSTRACT

This document provides a summary of surface- and ground-water quality and associated information for monitoring conducted as part the Snowy 2.0 project, across monitoring locations pertaining to Environmental Protection Licence (EPL) 21266.

### Revision Record

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|------|------------|------------------|---------------|--------------|--------------------|
| Rev. | Date       | Reason for Issue | Responsible   | Accountable  | Endorsed           |

## Document Verification

### RACIE Record

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## 1. INTRODUCTION

Snowy 2.0 was declared State Significant Infrastructure and Critical State Significant Infrastructure by the NSW Minister for Planning under the provisions of the NSW Environmental Planning and Assessment Act 1979 and is defined in Clause 9 of Schedule 5 of the State Environmental Planning Policy (State and Regional Development) 2011.

An Infrastructure Approval No. SSI 9208 based on the Environmental Impact Statement (EIS) submitted for the Snowy 2.0 Exploratory Works was received on February 7, 2019.

An Environment Protection Licence No. 21266 (EPL - 21266) under Section 55 of the Protection of the Environment Operations Act 1997 (NSW) was issued to Snowy Hydro Ltd (Snowy Hydro) on May 9, 2019, by the New South Wales Environment Protection Authority (NSW EPA) for land based extractive activities at Lobs Hole and Talbingo Reservoir in Kosciuszko National Park. During this reporting period there has been two variations to EPL 21266. An EPL variation was issued on 06 July 2022 which covered spoil management conditions (O5.1-O5.8). An EPL variation was issued on 05 October 2022 which covered the addition of surface water and groundwater monitoring points, and multiple condition updates. A summary of the variations is provided in Table 1-3.

WeBuild, Clough, and Lane have formed the Future Generation Joint Venture (Future Generation) and have been engaged by Snowy Hydro to deliver both Stage 2 of Exploratory Works and Snowy 2.0 Main Works. As required by EPL - 21266 Future Generation have undertaken a monthly monitoring program to assess the influence of the Snowy 2.0 Main Works project on groundwater and receiving surface water quality across the Project, specifically the work sites of Talbingo, Lobs Hole, Tantangara, Marica and Rock Forest.

This report has been prepared by Jess Adams, Environmental Coordinator for Future Generation. Jess holds a Bachelor of Environmental, and a Master of Environmental Law and Policy with 9 years' experience in environmental assessment, management and reporting across various construction and infrastructure projects.

This report has been reviewed by Dr Ellen Porter, Environmental Manager for Future Generation. Ellen holds a PhD in Organic Geochemistry, is a Certified Environmental Practitioner (no. 1080), and has 11 years' experience in the field of environmental assessment, monitoring and reporting. Therefore, this report has been prepared by and reviewed by suitably qualified and experienced persons fulfilling the requirement of condition R4.3 of EPL 21266.

### 1.1. Purpose

The purpose of this report is to provide a six (6) monthly update of surface water and groundwater monitoring undertaken for the Snowy 2.0 project in accordance with Condition R4.2 of EPL 21266.

Section 2, Condition P1.2 of EPL 21266 identifies the points required for monitoring, these points are presented on **Figures 1.1 – 1.5 of Appendix A** and listed in **Table 1.1** below.

**Table 1-1: EPL21266 Location Names, Co-Ordinates, and Description**

| Name          | X       | Y       | Location  | Sample Type   | Description                                                                  |
|---------------|---------|---------|-----------|---------------|------------------------------------------------------------------------------|
| <b>EPL 01</b> | 148.413 | -35.792 | Lobs Hole | Groundwater   | Wallace Creek Bridge                                                         |
| <b>EPL 02</b> | 148.413 | -35.792 | Lobs Hole | Groundwater   | Wallace Creek Bridge                                                         |
| <b>EPL 04</b> | 148.415 | -35.788 | Lobs Hole | Groundwater   | Lobs Hole Portal Access                                                      |
| <b>EPL 05</b> | 148.416 | -35.785 | Lobs Hole | Surface Water | Yarrangobilly River, upstream of the exploratory tunnel and construction pad |

|               |         |         |             |                 |                                                                                                                                                                      |
|---------------|---------|---------|-------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EPL 06</b> | 148.412 | -35.793 | Lobs Hole   | Surface Water   | Wallaces Creek, upstream of the confluence of Yarrangobilly River and Wallaces Creek                                                                                 |
| <b>EPL 08</b> | 148.401 | -35.789 | Lobs Hole   | Surface Water   | Yarrangobilly River, downstream of Lick Hole Gully                                                                                                                   |
| <b>EPL 09</b> | 148.387 | -35.782 | Lobs Hole   | Surface Water   | Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir                                                                         |
| <b>EPL 10</b> | 148.38  | -35.773 | Lobs Hole   | Reservoir Water | Talbingo Reservoir, upstream of Lobs Hole STP/PWTP diffuser<br>outlet and water intake point                                                                         |
| <b>EPL 11</b> | 148.375 | -35.771 | Lobs Hole   | Reservoir Water | Talbingo Reservoir, downstream of Lobs Hole STP/PWTP diffuser outlet                                                                                                 |
| <b>EPL 12</b> | 148.414 | -35.789 | Lobs Hole   | Surface Water   | Yarrangobilly River, immediately downstream of portal pad                                                                                                            |
| <b>EPL 14</b> | 148.405 | -35.794 | Lobs Hole   | Surface Water   | Yarrangobilly River, downstream of road construction areas                                                                                                           |
| <b>EPL 15</b> | 148.404 | -35.792 | Lobs Hole   | Surface Water   | Yarrangobilly River, downstream of road construction areas                                                                                                           |
| <b>EPL 16</b> | 148.393 | -35.785 | Lobs Hole   | Surface Water   | Yarrangobilly River, downstream of road construction areas                                                                                                           |
| <b>EPL 24</b> | 148.389 | -35.78  | Lobs Hole   | Surface Water   | Yarrangobilly River tributary (Watercourse 2), directly downstream of road                                                                                           |
| <b>EPL 25</b> | 148.415 | -35.788 | Lobs Hole   | Groundwater     | Portal Access                                                                                                                                                        |
| <b>EPL 26</b> | 148.488 | -35.794 | Marica      | Surface Water   | Eucumbene River, downstream of Marica Road                                                                                                                           |
| <b>EPL 27</b> | 148.488 | -35.794 | Marica      | Surface Water   | Eucumbene River, upstream of Marica Road                                                                                                                             |
| <b>EPL 28</b> | 148.654 | -35.748 | Tantangara  | Reservoir Water | Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River. Variable location dependent on tide and reservoir levels.                                     |
| <b>EPL 29</b> | 148.661 | -35.793 | Tantangara  | Reservoir Water | Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River                                                                              |
| <b>EPL 30</b> | 148.652 | -35.801 | Tantangara  | Surface Water   | Kellys Plain Creek, downstream of accommodation camp and laydown areas                                                                                               |
| <b>EPL 31</b> | 148.648 | -35.806 | Tantangara  | Surface Water   | Kellys Plain Creek, upstream of accommodation camp and laydown areas                                                                                                 |
| <b>EPL 32</b> | 148.659 | -35.79  | Tantangara  | Reservoir Water | Tantangara Reservoir, Tantangara Intake. Downstream of construction works                                                                                            |
| <b>EPL 33</b> | 148.664 | -35.795 | Tantangara  | Surface Water   | Murrumbidgee River, downstream of Tantangara reservoir outlet                                                                                                        |
| <b>EPL 34</b> | 148.633 | -35.865 | Tantangara  | Surface Water   | Nungar Creek, upstream of Tantangara Road                                                                                                                            |
| <b>EPL 35</b> | 148.633 | -35.865 | Tantangara  | Surface Water   | Nungar Creek, downstream of Tantangara Road                                                                                                                          |
| <b>EPL 36</b> | 148.668 | -35.952 | Rock Forest | Surface Water   | Camerons Creek, upstream of works in Rock Forest                                                                                                                     |
| <b>EPL 37</b> | 148.675 | -35.948 | Rock Forest | Surface Water   | Camerons Creek, downstream of works in Rock Forest                                                                                                                   |
| <b>EPL 38</b> | 148.653 | -35.769 | Tantangara  | Reservoir Water | Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities |
| <b>EPL 39</b> | 148.639 | -35.761 | Tantangara  | Reservoir Water | Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works             |
| <b>EPL 40</b> | 148.623 | -35.755 | Tantangara  | Reservoir Water | Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works                     |
| <b>EPL 41</b> | 148.381 | -35.772 | Talbingo    | Reservoir Water | Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point.                                                                                                          |

|                |         |         |            |                               |                                                                                                                                                        |
|----------------|---------|---------|------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |         |         |            |                               | Downstream of final treatment, prior to discharge to Talbingo Reservoir                                                                                |
| <b>EPL 42*</b> | 148.375 | -35.772 | Talbingo   | Discharge Point               | Diffuser outlet discharging into Talbingo Reservoir from Lobs Hole STP/PWTP                                                                            |
| <b>EPL 43*</b> | 148.381 | -35.772 | Talbingo   | Volume Outflow                | Lobs Hole STP/PWTP Final Volume Monitoring Point.<br>Downstream of final treatment, prior to discharge to Talbingo Reservoir                           |
| <b>EPL 44*</b> | 148.417 | -35.787 | Lobs Hole  | Volume Inflow – PWTP          | Lobs Hole (MAT Portal) PWTP Inflow Volume Monitoring Point                                                                                             |
| <b>EPL 45*</b> | 148.393 | -35.783 | Talbingo   | Volume Inflow – Ex-Camp STP   | Lobs Hole Ex-Camp STP Inflow Volume Monitoring Point                                                                                                   |
| <b>EPL 46</b>  | 148.657 | -35.795 | Tantangara | Discharge Point               | Diffuser outlet discharging into Tantangara Reservoir from Tantangara STP / PWTP                                                                       |
| <b>EPL 47</b>  | 148.392 | -35.783 | Talbingo   | Volume Inflow – Main Camp STP | Talbingo Main Camp STP Inflow Monitoring Point                                                                                                         |
| <b>EPL 48</b>  | 148.656 | -35.802 | Tantangara | Volume Inflow STP             | Tantangara STP Inflow Volume Monitoring Point                                                                                                          |
| <b>EPL 49</b>  | 148.65  | -35.791 | Tantangara | Volume Inflow PWTP            | Tantangara PWTP Inflow Volume Monitoring Point                                                                                                         |
| <b>EPL 50</b>  | 148.651 | -35.791 | Tantangara | Volume Outflow                | Tantangara STP/PWTP final effluent quality and volume monitoring point                                                                                 |
| <b>EPL 51</b>  | 148.66  | -35.794 | Tantangara | Surface Water                 | Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet.                                                                               |
| <b>EPL 52^</b> | 148.338 | -35.778 | Lobs Hole  | Surface Water                 | Talbingo Reservoir, upstream of GF01 emplacement area, labelled Basin labelled GF01 - SW - SB in 'Leachate Detection Procedure - GF01' (DOC22/650275)  |
| <b>EPL 53^</b> | 148.391 | -35.774 | Lobs Hole  | Surface Water                 | Talbingo Reservoir upstream East of GF01 emplacement area labelled GF01 - SW - USE in 'Leachate Detection Procedure - GF01' (DOC22/650275)             |
| <b>EPL 54^</b> | 148.389 | -35.775 | Lobs Hole  | Surface Water                 | Talbingo Reservoir Upstream West of GF01 emplacement area labelled GF01 - SW - USW in 'Leachate Detection Procedure - GF01' (DOC22/650275)             |
| <b>EPL 55^</b> | 148.387 | -35.778 | Lobs Hole  | Surface Water                 | Yarrangobilly River, Surface Water Downstream of GF01 emplacement area labelled GF01 - SW - DS in 'Leachate Detection Procedure - GF01' (DOC22/650275) |
| <b>EPL 56^</b> | 148.391 | -35.774 | Lobs Hole  | Groundwater                   | Ground Water Upstream East from GF01 emplacement area labelled GF01 - GW - USE in 'Leachate Detection Procedure - GF01' (DOC22/650275)                 |
| <b>EPL 57^</b> | 148.389 | -35.775 | Lobs Hole  | Groundwater                   | Ground Water Upstream West from GF01 emplacement area labelled GF01 - GW - USW in 'Leachate Detection Procedure - GF01' (DOC22/650275)                 |
| <b>EPL 58^</b> | 148.389 | -35.777 | Lobs Hole  | Groundwater                   | Ground Water Downstream from GF01 emplacement area labelled GF01 - GW - DS in 'Leachate Detection Procedure - GF01' (DOC22/650275)                     |

|                           |         |          |            |               |                                                                                                                                                               |
|---------------------------|---------|----------|------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EPL 59<sup>^</sup></b> | 148.644 | -35.761  | Tantangara | Surface Water | Tantangara Leachate Basin labelled Tan-SW-SB1 in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                                                   |
| <b>EPL 60<sup>^</sup></b> | 148.644 | -35.760  | Tantangara | Surface Water | Tantangara Leachate Basin labelled Tan-SW-SB2 in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                                                   |
| <b>EPL 61<sup>^</sup></b> | 148.648 | -35.76   | Tantangara | Surface Water | Tantangara Leachate Basin labelled Tan-SW-SB3 in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                                                   |
| <b>EPL 62<sup>^</sup></b> | 148.649 | -35.762  | Tantangara | Surface Water | Tantangara Leachate Basin labelled Tan-SW-SB4 in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                                                   |
| <b>EPL 63<sup>^</sup></b> | 148.649 | -35.763  | Tantangara | Surface Water | Tantangara Leachate Basin labelled Tan-SW-SB5 in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                                                   |
| <b>EPL 64<sup>^</sup></b> | 148.64  | -35.767  | Tantangara | Surface Water | Tantangara Leachate Basin labelled Tan-SW-SB6 in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                                                   |
| <b>EPL 65<sup>^</sup></b> | 148.648 | -35.7641 | Tantangara | Surface Water | Tantangara Leachate Basin labelled Tan-SW-SB7 in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                                                   |
| <b>EPL 66<sup>^</sup></b> | 148.651 | -35.763  | Tantangara | Surface Water | Tantangara Leachate Basin Downstream East from Tantangara emplacement area labelled Tan-SW-DSE in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)  |
| <b>EPL 67<sup>^</sup></b> | 148.642 | -35.760  | Tantangara | Surface Water | Nungar Creek Surface Water Downstream West from Tantangara emplacement area labelled Tan-SW-DSW in 'Leachate Detection Procedure - Tantangara' (DOC22/798284) |
| <b>EPL 68<sup>^</sup></b> | 148.644 | -35.760  | Tantangara | Groundwater   | Ground Water Downstream East from Tantangara emplacement area labelled Tan-GW-DSE in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)               |
| <b>EPL 69<sup>^</sup></b> | 148.650 | -35.763  | Tantangara | Groundwater   | Ground Water Downstream West from Tantangara emplacement area labelled Tan-GW-DSW in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)               |
| <b>EPL 70<sup>^</sup></b> | 148.645 | -35.770  | Tantangara | Groundwater   | Ground Water Upstream from Tantangara emplacement area labelled Tan-GW-US in 'Leachate Detection Procedure - Tantangara' (DOC22/798284)                       |

\*these EPL points do not require any water quality monitoring for the purposes of EPL21266

<sup>^</sup> GPS Coordinates are a guide only, ground truthing is required and sampling locations will be determined based on conditions in field.

## 1.2. Conditions of Report

As per Section 6, Condition R4.3 of EPL 21266 this report must include the information listed in **Table 1.2**.

**Table 1-2: EPL 21266 Environmental Monitoring Report Requirements**

| Environmental Monitoring Report requirement                                                                                                                                                                                                                                                                 | Report Section                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Results of all water quality monitoring undertaken in the preceding six (6) month period                                                                                                                                                                                                                    | Appendix B, Appendix C            |
| Results of all weather monitoring undertaken in the preceding six (6) month period                                                                                                                                                                                                                          | Section 2                         |
| Assessment of historical trends in all water sampling data for each monitoring point inclusive of the current six (6) month period                                                                                                                                                                          | Section 3                         |
| Identification of instances where the water quality objective triggers for each relevant pollutant were exceeded at receiving water locations and/or where the predicted discharge water quality was exceeded at sediment basin discharge points;                                                           | Section 3, Appendix C, Appendix D |
| Include details of any actions taken by the Licensee in response to exceedances identified including but not limited to: <ul style="list-style-type: none"> <li>i. additional monitoring</li> <li>ii. remedial actions; and</li> <li>iii. activation of trigger, action, response plans (TARPs);</li> </ul> | Sections 3 and 4                  |
| Recommendations for future actions in relation to monitoring and/or management                                                                                                                                                                                                                              | Section 4                         |

## 1.3. EPL Variations in Reporting Period

**Table 1-3** outlines the amendments included in each variation of EPL 21266 between June 2022 and November 2022.

**Table 1-3: EPL Variation within this reporting period**

| Date of Variation | Changes outlined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 06 July 2022      | <ul style="list-style-type: none"> <li>Operation conditions O5.1 - O5.8 have been included on the Licence.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 05 October 2022   | <ul style="list-style-type: none"> <li>Condition A1.3: The note underneath this condition has been amended to update approved scheduled development works</li> <li>Condition P1.2: Surface water monitoring points 52, 53, 54, 55, 59, 60, 61, 62, 63, 64, 65, 66 and 67 have been added</li> <li>Condition P1.2: Groundwater monitoring points 56, 57, 58, 68, 69, and 70 have been added</li> <li>Condition M2: The sampling method and frequency of pollutant monitoring for points 52 to 70 has been added</li> <li>Condition U1: Assessment of Diffuse Source Water Pollution Management PRP has been added</li> <li>Condition U2: Generator emission improvements program has been added</li> </ul> |

## 1.4. Project Updates

This bi-annual monitoring update includes June 2022 – November 2022 EPL sampling rounds. This period included significant progress of the Main Works package of the Snowy 2.0 Project. A summary of construction activities at each site is outlined below.

### 1.4.1. Talbingo – (Talbingo Adit Portal / Talbingo Intake / Main Camp / Ex Camp / GF01)

- Talbingo Intake at excavation level RL 581.

- Talbingo Adit portal beginning to assemble TBM and supporting facilities (WTP, Grout Plant, etc)
- Main Camp covered walkways and close out items ongoing
- Talbingo Adit Portal and Main Camp earthworks footprint complete
- GF01 clearing commenced and leachate preparation works commenced
- GF01 expect to begin taking TBM spoil in January 2023

#### 1.4.2. **Lobs Hole – (Mat Portal / Main Yard / ECVT / Ravine Road)**

- TBM finished tunneling in Mat Portal at the start of October. Disassembly of the TBM has commenced
- Disassembly of portal facilities has commenced including; discharge conveyor, drive station and grout plant
- Drill and blast activities (Blasting, bolting, shotcreting, mucking, drilling) are occurring at CT07, CT01, CP01, CP02, turning bay, MAT02
- Stage 5 earthworks is ongoing.
- Ashfelting of Ravine Road close to completion.
- Main Yard fill and materials processing ongoing from TBMs spoil.
- Level spreader and rock-lined batter chute rectification works close to completion.
- TBM 1 progressing in ECVT Portal.

#### 1.4.3. **Marica**

- Surge shaft excavation is ongoing.
- Underground utilities installation including trenching in the shaft and laydown area is ongoing.
- FRP works, aggregate storage shed installation and generator installation in progress.
- Sharft pad surface drainage FRP works in progress.
- Marica Trail Road widening between CH0 – CH2100 build to IFC design.
- Bottom HDD pad facilities installation complete and in use.
- Horizontal directional drilling is ongoing through the borehole.
- All accommodation blocks installation completed and commissioned. Installation of covered walkways in progress.

#### 1.4.4. **Tantangara**

- HRT Adit TBM continues operating in geohazards conditions. Remediation works are ongoing.
- Gate shaft excavation is ongoing. Shed structural installation in progress.
- Warehouse completed and workshop installation works are ongoing.
- All accommodation blocks installation completed.

- Tantangara road maintenance is ongoing with LEED.
- Quarry trail road widening from FGJV.
- Batch Plant in operation.
- Works ongoing on Tantangara Spoil Road. The earthworks are completed up to the spoil area. Pavement to be installed after the intake blasting
- Water treatment plant operational.

#### 1.4.5. **Trunk Services**

- Trenching along the alignment ongoing.
- Clearing carried out for drill pads and towards Tantangara.
- Site rehabilitation progressing.
- ERSER improvement actions and items largely complete.
- Water Quality Monitoring ongoing.
- Underboring commenced.

#### 1.4.6. **Rock Forest**

- Site operational as laydown area

## 2. WEATHER MONITORING RESULTS

### 2.1. Weather Stations

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

- “Lobs Hole” - an automatic weather station managed by Future Generation in Lobs Hole Main Yard.
- “Cabramurra” - an automatic weather station located near the lookout in the Cabramurra township managed by the Bureau of Meteorology (BoM)
- “Tantangara” - an automatic weather station managed by Future Generation in Tantangara construction site.

The Tantangara and Lobs Hole gauges are in sub-alpine environments, with elevations of approximately 1200 m and 600 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.

### 2.2. Rainfall Data

The previous Biannual Monitoring Report (S2-FGJV-ENV-REP-0052) noted above-average rainfall. The conditions for this reporting period followed a similar pattern with La Nina conditions.

The cumulative rainfall between June 2022 and M 2022 is presented in **Figure 2-1**.

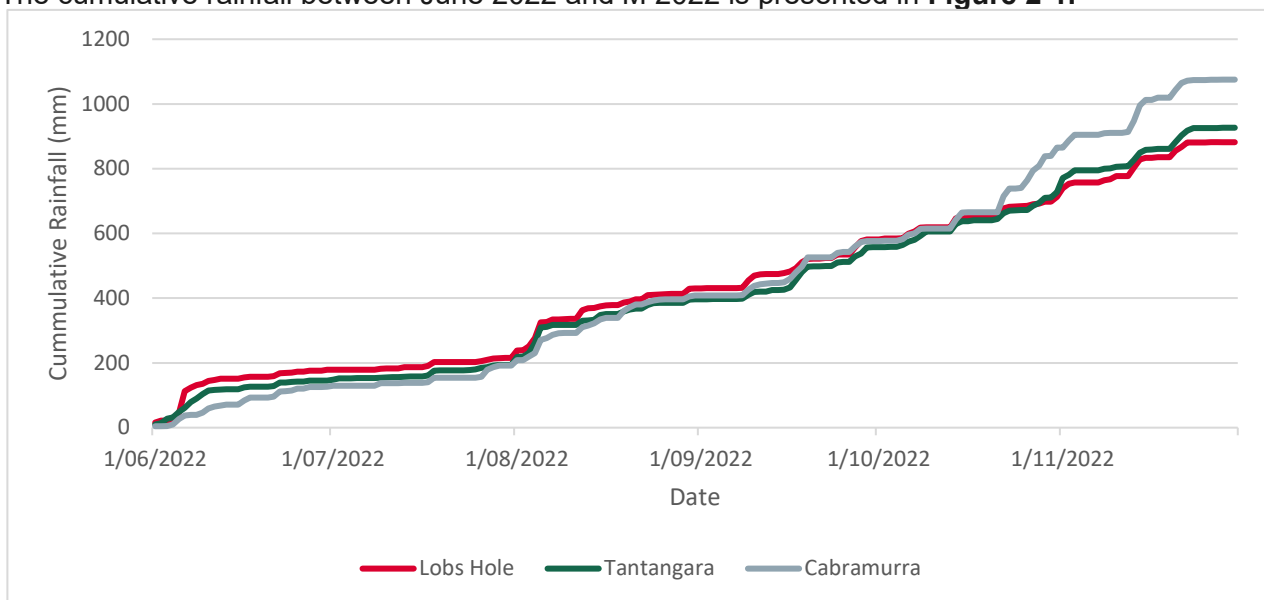


Figure 2-1: Cumulative Rainfall across Lobs Hole, Tantangara and Cabramurra.

At each of the three rainfall recording sites (Tantangara, Lobs Hole, and Cabramurra), the highest volume of rain that fell in a single day are as follows:

- 67.4 mm at Lobs Hole – 06/06/2022
- 49.6 mm at Cabramurra (Marica) – 22/10/2022
- 47.4 mm at Tantangara – 05/08/2022

On the five-day time scale, the heaviest precipitation events were as follows:

- Lobs Hole: 111.4 mm between the 5 and 9 June 2022;
- Cabramurra (Marica): 105.4 mm between 13 and 17 November 2022; and
- Tantangara: 115 mm between 1 and 5 July 2022

**Table 2-1: Recorded rainfall (mm) across Snowy 2.0 worksites. Long Term Average (LTA) rainfall data from BOM. Lobs Hole average rainfall taken from Tumbarumba total weather station. Tantangara taken from Adaminaby Alpine Tourist Park Weather Station**

|           | Tantangara   |      | Cabramurra (Marica) |       | Lobs Hole |       |
|-----------|--------------|------|---------------------|-------|-----------|-------|
| Month     | Monthly (mm) | LTA  | Monthly             | LTA   | Monthly   | LTA   |
| June      | 145.4        | 57.8 | 127                 | 122.7 | 178.6     | 102.2 |
| July      | 48.6         | 53.8 | 64.4                | 114.1 | 36.6      | 104.0 |
| August    | 202.8        | 59.7 | 217.2               | 129.7 | 215.2     | 106.6 |
| September | 160.4        | 60.1 | 167.6               | 126.7 | 151.4     | 90.5  |
| October   | 170.2        | 67.8 | 289.4               | 111.7 | 130.8     | 95.3  |
| November  | 199.2        | 58.9 | 209.6               | 122.2 | 169.2     | 76.9  |

Following the trends outlined in the previous Bi-annual Monitoring Report, the Winter and Spring rainfall produced generally much higher than average rainfall for the region (**Table 2-1**), caused by the continuation and strengthening of La Nina in the Tropical Pacific.

## 2.3. Temperature Data

**Figure 2-1** to **Figure 2-4** show temperature maximum and minimums across the project at Lobs Hole and Cabramurra weather stations.

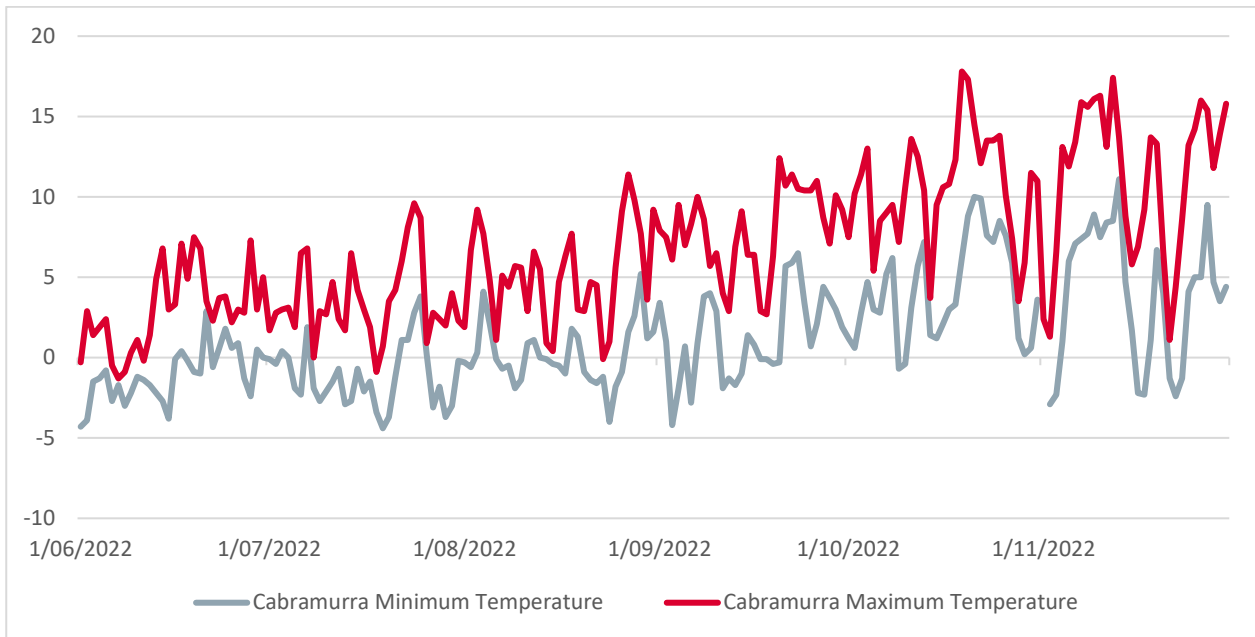


Figure 2-2: Cabramurra (Marica) - Minimum and Maximum Temperatures

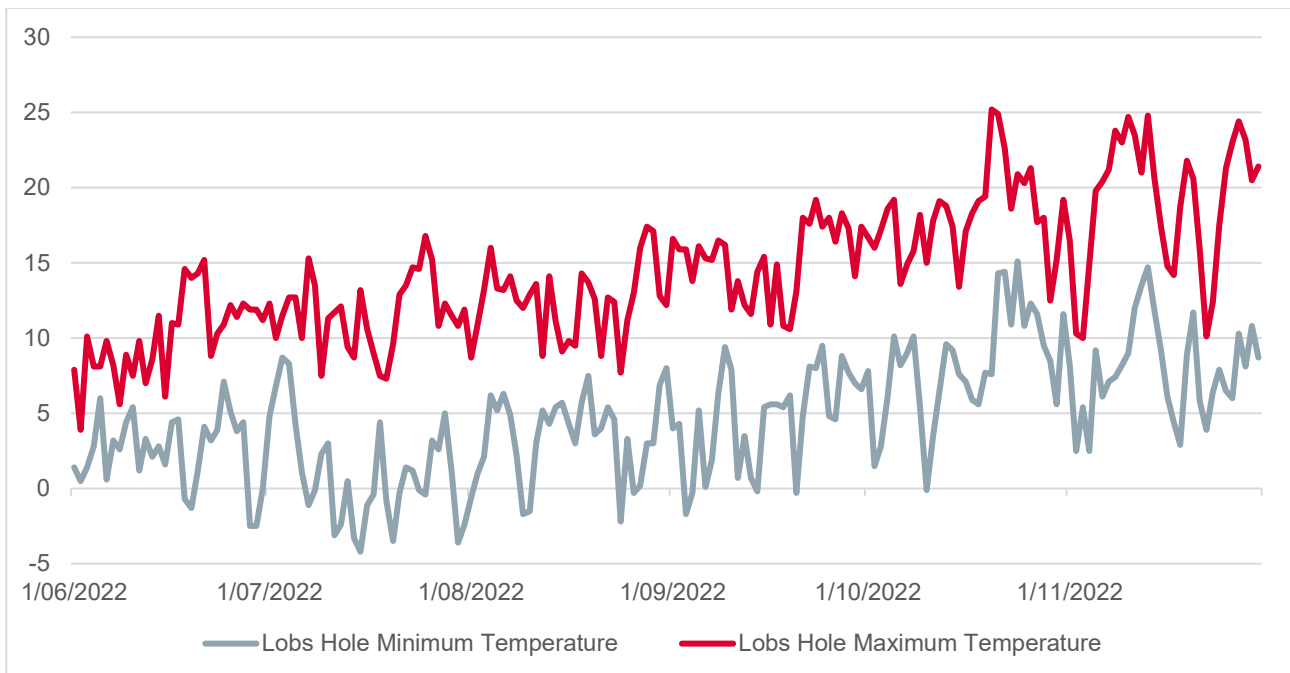


Figure 2-3: Lobs Hole - Minimum and Maximum Temperatures

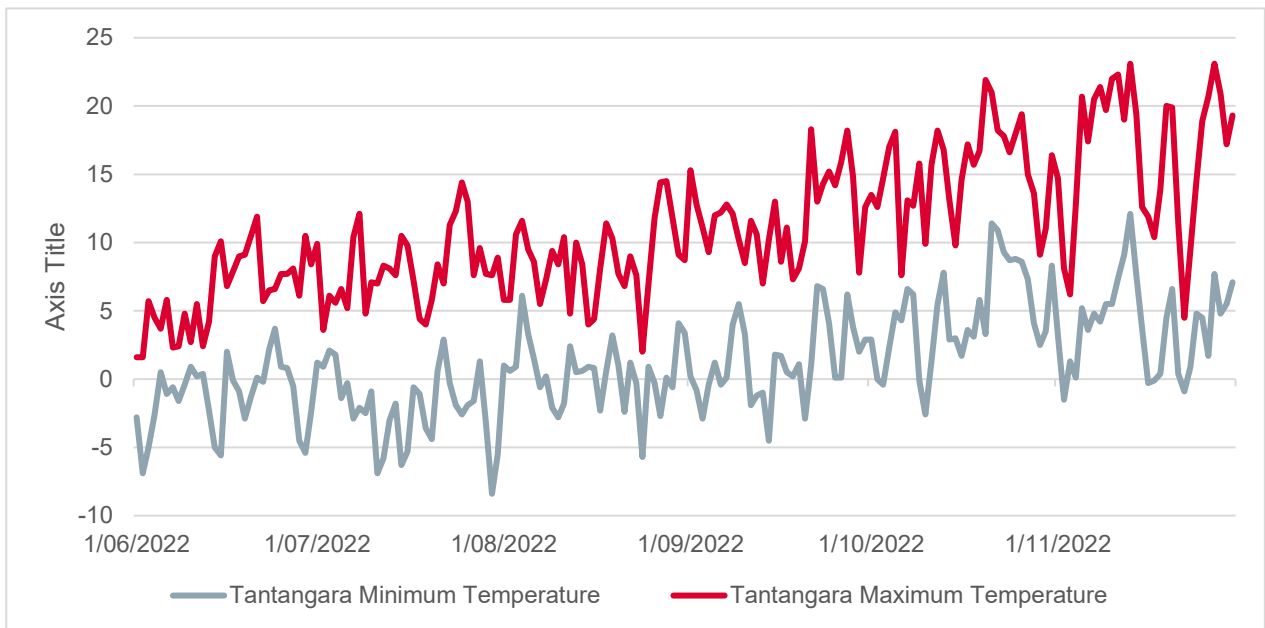


Figure 2-4: Tantangara - Minimum and Maximum Temperatures

### 3. MONITORING RESULTS

#### 3.1. June 2022 – November 2022 Water Quality Monitoring

Water Quality Monitoring results are provided in **Appendix B** and **C** for monthly EPL monitoring rounds. The sampling work was performed in accordance with:

- S2-FGJV-ENV-PLN-0010 Water Management Plan – Snowy 2.0 Main Works
- AS 5667:1 - Water quality- Sampling: Guidance on the design of sampling programs and the preservation and handling of samples;
- AS 5667:4 - Water quality - Sampling: Guidance on the sampling of lakes, natural and man made;
- AS 5667:6 - Water quality - Sampling: Guidance on the sampling of rivers and streams; and
- AS 5667:11 - Water quality- Sampling: Guidance on the sampling of groundwater.

#### 3.2. In situ Monitoring

Under Section 6 Condition R4.1, the EPA must be notified of any *in situ* pollution concentrations that exceed, or are outside the range of, relevant water quality trigger values within licenced premises (Condition R4.1 a) or at the designated EPL monitoring points (Condition R4.1 b).

**Table 3-1: Number of Concentrations Exceeding or Outside the Range of Water Quality Objectives for Monthly EPL Monitoring**

| Water Quality Objectives | DO (%) | EC (µS/cm)                                 | pH    | Turbidity (NTU) | Comment                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|--------|--------------------------------------------|-------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range                    | 90-110 | >350 surface/groundwater<br>>30 reservoirs | 6.5-8 | >25             |                                                                                                                                                                                                                                                                                                                                                               |
| <b>2022</b>              |        |                                            |       |                 |                                                                                                                                                                                                                                                                                                                                                               |
| Jun                      | 20     | 17                                         | 13    | 2               | Low pH and EC are generally representative of the background conditions in June 2022 with most exceedances only marginally less than WQO criteria though a decreasing trend is becoming apparent.                                                                                                                                                             |
| Jul                      | 12     | 10                                         | 3     | 1               | Low DO, pH, and EC are generally representative of background conditions for July 2022 and are consistent with previous results.                                                                                                                                                                                                                              |
| Aug                      | 5      | 4                                          | 17    | 7               | The elevated turbidity is likely a result of significant rainfall and ground saturation on site. Low pH is generally representative of the background conditions in August 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent.                                                                                       |
| Sep                      | 23     | 0                                          | 14    | 9               | Much like the previous months of monitoring, low DO is representative of background conditions. Elevated turbidity is likely a result of sampling being conducted after rainfall. pH marginally exceeded the WQO with marginal lower concentrations reported, rather than significant exceedances.                                                            |
| Oct                      | 10     | 0                                          | 15    | 0               | Similar to previous monitoring, DO and pH variations are likely a result of typical background conditions with only marginal exceedances or values less than the WQO.                                                                                                                                                                                         |
| Nov                      | 10     | 0                                          | 5     | 4               | EC, Turbidity and pH were generally within the range baseline data with a select few locations marginally exceeding the WQO. These results are considered representative of background conditions. DO concentrations were less than the WQO for a number of locations, which is consistent with the previous months of monitoring of a downward facing trend. |

All *in situ* monitoring results are presented in **Appendix B – Field Monitoring Data**.

Dissolved oxygen across most of the EPL sampling locations is typically lower than the WQO. As the WQO were derived from the default trigger values for physical and chemical stressors in south-

east Australia (upland rivers and freshwater lakes/reservoirs), it is evident that results during winter/spring months are on a downward trend and are consistently reported as less than the WQO. Electrical conductivity across the project EPL sampling locations is also more commonly lower than the adopted WQO during winter/spring months. After snow melt and rainfall, it is expected that the waterbodies (rivers and reservoirs) within the project would see a decrease in electrical conductivity concentrations, which is consistent with the in-situ monitoring results for the 6-month period. Turbidity is also known to vary significantly following a rain event, with sampling in June, August, September, October, and November occurring during or directly following a significant rain event, which would account for the higher turbidity readings. pH is also variable within the project EPL sampling locations with exceedances generally marginally lower than the WQO.

Throughout the reporting period, several higher-than-average rainfall events were experienced at all sites (Figure 2-1), including:

- 1 – 5 June (45.2mm – Lobs Hole, 48.8 – Tantangara)
- 6 – 10 June (99.4mm – Lobs Hole, 65.6mm – Tantangara)
- 26 – 20 July (37.6mm – Marica)
- 30 July – 3 August (36mm – Lobs Hole, 36.8mm – Tantangara)
- 1 – 5 August (79.6mm – Marica)
- 4 – 8 August (83mm – Lobs Hole, 86.6mm – Tantangara)
- 9 – 13 August (34.8mm – Lobs Hole)
- 12 – 16 August (32.8mm – Tantangara, 46.2mm – Marica)
- 19 – 23 August (48mm – Marica)
- 9 – 13 September (43mm – Lobs Hole, 38.2mm – Marica)
- 16 – 20 September (44.2mm – Lobs Hole, 71.6mm – Tantangara, 77.2mm – Marica)
- 24 – 28 September (53mm – Lobs Hole, 37.6mm – Tantangara, 46.8mm – Marica)
- 6 – 10 October (34.2mm – Lobs Hole, 41.4mm – Tantangara)
- 14 – 18 October (32.6mm Lobs Hole, 35mm – Tantangara, 50.8mm – Marica)
- 22 – 26 October (30.6mm – Lobs Hole, 99mm – Marica)
- 27 – 31 October (54.6mm – Tantangara, 101.2mm – Marica)
- 1 – 5 November (45.2mm – Lobs Hole, 67.8mm – Tantangara, 39.4mm – Marica)
- 13 – 17 November (58.4mm – Lobs Hole, 54mm Tantangara, 105.4mm – Marica)
- 20 – 24 November (45.6mm – Lobs Hole, 64mm – Tantangara, 55.2mm – Marica)

Exceedances of the water quality objectives were present in the upstream, downstream and basin sampling locations. When downstream and basin results were compared to the predicted discharge quality characterises, exceedances were consistent with the likely ranges.

Water samples were collected for comprehensive water testing and the EPA were notified of the releases in accordance with R4.1 of EPL 21266.

Dissolved oxygen (DO%), pH, Turbidity (NTU) and Electrical Conductivity (EC  $\mu\text{S}/\text{cm}$ ) numbers show variance from the WQO with consistency across the 6 months. Where values occurred outside the WQO range - they were noted to be both upstream, downstream of the Snowy 2.0 construction

envelope. In winter months and early spring, DO concentrations are typically higher when water temperature is low. Similarly, EC and Turbidity fluctuate with wet weather conditions and pH according to the SWMP frequently exceeded the WQO in summer/spring. Therefore, it has been determined that these exceedances are not impacts resulting from Snowy 2.0 work activities and are indicative of existing background conditions rather than impacts from the project.

### 3.3. Groundwater Monitoring

Groundwater sampling was undertaken in August and November 2022. Groundwater piezometer data is currently being processed for the Q3 and Q4 period. This report will be updated once the groundwater data is finalised.

Analyte concentrations that exceed or are outside the range of relevant water quality trigger values are presented in **Appendix C**. Generally, Laboratory analytes in August and November 2022 were less than, or within, relevant water quality trigger values except for:

- Nitrogen (total);
- Reactive Phosphorous;
- Copper (filtered);
- Iron (filtered);
- Manganese (filtered);
- Nickel (filtered); and
- Zinc (filtered).

Nutrient exceedances of the relevant water quality objectives occurred in two groundwater boreholes for phosphorous (EPL4 and EPL1) and all wells for nitrogen. These exceedances are likely caused from natural background conditions and were consistent with previous monitoring rounds. Metal exceedances were also generally consistent with background conditions, with the consistent iron exceedances suggesting potential for acid mine drainage, coupled with hydrogen sulphide odours. Further comments on groundwater are summarised below:

- Groundwater quality was generally within the previously noted results and background range.
- Localised differences in monitoring bores situated in fractured rock aquifers should be expected as differences in fracture size, frequency and connectivity all affect the aquifer flow and transmission of geochemistry into groundwater.
- Tailrace tunnelling commenced at Lobs Hole in June 2021. Groundwater modelling suggests that construction activities are not likely to impact the surrounding environment until approximately 3 to 4 years into the Snowy 2.0 project. Groundwater assessment for Q3 and Q4 2022 has not been finalised due to weather induced access restrictions delaying data collection. This report will be updated once data is available.
- Significant wet weather events were experienced throughout winter and spring with the continuation of the La Nina during this reporting period. This would have caused groundwater recharge through fire impacted areas, which could have led to the increased concentrations of some metals as similar increases in metals have been observed in surface water on site.

Based on the information above, groundwater exceedances between June 2022 to November 2022 data are not impacts resulting from Snowy 2.0 work activities and are indicative of background data. These exceedances did not trigger the need for further sampling, remedial actions or TARPs.

### 3.4. Surface Water

Surface water monitoring has been split up into:

- Talbingo and Tantangara Reservoirs;
- Lobs Hole;
- Tantangara; and
- Marica and Rock Forest.

#### 3.4.1. Talbingo and Tantangara Reservoirs

Analyte concentrations that exceed or are outside the range of relevant water quality trigger values are presented in **Appendix C**. Generally, Laboratory analytes in June 2022 to November 2022 were less than, or within, relevant water quality trigger values except for:

- Nitrite + Nitrate as N;
- Nitrogen;
- Aluminium (filtered);
- Copper (filtered);
- Chromium;
- Cyanide; and
- Zinc (filtered).

Elevated nutrient concentrations are likely a result of algae blooms in the reservoirs and/or decomposing plant material releasing nutrients. Metal concentrations that exceeded the WQO are consistent with background concentrations and are found to naturally occur in soils in the areas. Elevated oil and grease concentrations are present in majority of the EPL sampling locations across the project, including upstream, indicating the sources of this aren't likely project related however, further investigation into these concentrations is being investigated. The monitoring results demonstrate that the water quality in the Tantangara and Talbingo Reservoir has consistency across multiple EPL monitoring events with the exceedances not shown to have increased since the onset of the proximal construction of Snowy 2.0.

The exceedances to the water quality objectives within the Talbingo and Tantangara Reservoirs are not considered to be caused or added to by the ongoing construction works of Snowy 2.0. These exceedances did not trigger the need for further sampling, remedial actions or TARPs.

#### 3.4.2. Lobs Hole Surface Water

The predominant water body within the Lobs hole region is the Yarrangobilly River (**Appendix A**). It along with its tributaries constitute the EPL surface water sampling locations within the Lobs Hole area. Analyte concentrations that exceed or are outside the range of relevant water quality trigger values are presented in **Appendix C**. Generally, Laboratory analytes between June 2022 and November 2022 were less than, or within, relevant water quality trigger values except for:

- Nitrite + Nitrate as N;
- Cyanide;
- Nitrogen;

- Aluminium (filtered);
- Chromium (filtered);
- Copper (filtered);
- Lead (filtered); and
- Zinc (filtered).

The monitoring results demonstrate that the water quality in Lobs Hole has consistency across multiple EPL monitoring events with the exceedances not shown to have increased since the onset of the proximal construction of Snowy 2.0. Elevated nutrients and metals are likely a result of naturally elevated conditions during rainfall and/or winter months. Oil and grease concentrations have been found to be present in majority of the EPL sampling locations across the project, including upstream, indicating the sources of this aren't likely project related however, further investigation into these concentrations is being investigated.

The exceedances to the water quality objectives within the Lobs Hole surface waters are not considered to be caused or added to by the ongoing construction works of Snowy 2.0. These exceedances did not trigger the need for further sampling, remedial actions or TARPs.

#### 3.4.3. Marica Surface Water

The predominant water body within the Marica are the headwaters of the Eucumbene River (**Appendix A**). Two samples are taken up and downstream of the Snowy 2.0 disturbance areas to make up the EPL sampling locations. Analyte concentrations that exceed or are outside the range of relevant water quality trigger values are presented in **Appendix C**. Generally, sampling results between June 2022 and November 2022 were less than, or within, relevant water quality trigger values with the exception of:

- Nitrite + Nitrate as N;
- Cyanide;
- Aluminium (filtered); and
- Chromium (filtered)

The monitoring results demonstrate that the water quality in Marica displays similar results across multiple EPL monitoring events with the exceedances showing consistency with background conditions and have not shown to have increased since the onset of the proximal construction of Snowy 2.0.

The exceedances to the water quality objectives within the Marica surface waters are natural in origin not considered to be caused or added to by the ongoing construction works of Snowy 2.0. These exceedances did not trigger the need for further sampling, remedial actions, or TARPs.

#### 3.4.4. Tantangara Surface Water

The predominant water bodies within the Tantangara region are the Nungar and Kelly's Plain Creeks (**Appendix A**). They, along with the outflow of the Tantangara Reservoir (behind the dam wall), make up the EPL surface water sampling locations within the Tantangara area. Analyte concentrations that exceed or are outside the range of relevant water quality trigger values are presented in **Appendix C**. Generally, results from monthly EPL sampling between June 2022 and November 2022 were less than, or within, relevant water quality trigger values except for:

- Nitrite + Nitrate as N;

- Cyanide;
- Nitrogen (total);
- Aluminium (filtered);
- Chromium (filtered); and
- Zinc (filtered).

The monitoring results demonstrate that the water quality in the Tantangara has consistency across multiple EPL monitoring events with the exceedances not shown to have increased since the onset of the proximal construction of Snowy 2.0. Similarly with the Lobs Hole and Marica surface water EPL sampling points, elevated concentrations above the WQO of metals and nutrients are all likely attributed to natural conditions. Elevated oil and grease concentrations are present in majority of the EPL sampling locations across the project, including upstream, indicating the sources of this aren't likely project related however, further investigation into these concentrations is being investigated.

The exceedances to the water quality objectives within the Tantangara surface waters are not considered to be caused or added to by the ongoing construction works of Snowy 2.0. These exceedances did not trigger the need for further sampling, remedial actions, or TARPs.

#### 3.4.5. Rock Forest Surface Water

The predominant water body within Rock Forest is Cameron's Creek (**Appendix A**). Two samples are taken, up and downstream of the Snowy 2.0 disturbance areas to make up the EPL sampling locations. Analyte concentrations that exceed, or are outside the range of relevant water quality trigger values are presented in **Appendix C**. Generally, results from June 2022 and November 2022 were less than, or within, relevant water quality trigger values with the exception of:

- Nitrite + Nitrate as N;
- Nitrogen (total);
- Aluminium (filtered);
- Copper (filtered);and
- Iron (filtered).

Minimal construction works were completed between June 2022 and November 2022 at Rock Forest Area. The monitoring results demonstrate that the water quality in the Rock Forest has consistency across multiple EPL monitoring events with the exceedances likely to be related to the decades of agricultural use. High nitrogens are likely caused by remanent cow excrement while increased metals can be attributed to standard natural/background concentrations in the surrounding soils. The oil and grease exceedances were evident in upstream and downstream locations, indicating the source of this contaminant being from upstream agricultural uses.

The exceedances to the water quality objectives within the Rock Forest surface waters are not caused or added to by the ongoing construction works of Snowy 2.0. These exceedances did not trigger the need for further sampling, remedial actions or TARPs.

## 4. DISCUSSION

### 4.1. EPA Notifiable Events

See below the EPA notified events that triggered TARPs to be enacted onsite.

Table 4-1: Events Triggering TARP Implementation and EPA Notification

| Date     | Location   | Event ID             | Event                                                 | Outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------|------------|----------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 04/06/22 | Tantangara | S2-FGJV-ENV-INC-1559 | Failure of ERSED controls, Spoil Road                 | Works along spoil road were halted immediately and focus was solely placed on remediation. Thorough review and substantial improvement were made to ERSED controls. Capacity of the sediment basin at the end of the spoil road was increased, sediment curtain installation was scheduled, additional coir logs were utilised at the site of impact. In situ and comprehensive water sampling was completed. A follow up meeting with wider team to discuss immediate actions and planning for further permanent rectification was conducted.                                 |
| 16/06/22 | Lobs Hole  | S2-FGJV-ENV-INC-1598 | Unauthorised release of process water entering river. | Immediate corrective action was taken to pump the water from the temporary basin identified to be leaking, to a permanent sediment basin. Water sampling was undertaken at impact site, upstream and downstream of the discharge point within the Yarrangobilly River.<br><br>Further controls implemented included incorporating an additional bund outside the basin and repair works was completed.                                                                                                                                                                         |
| 21/06/22 | Marica     | S2-FGJV-ENV-INC-1614 | Sediment laden water entering creek                   | Moxy water cart was immediately deployed to the area to remove water from the sump at dip creek and impact immediately ceased. In-situ and comprehensive water sampling was completed upstream, downstream and at impact site as per Surface Water Management Plan.<br><br>Review of dewatering plan including ensuring all onsite water carts were scheduled to be fitted with necessary fitting to allow for dewatering of sumps and sediment basin & sump capacity/lining was enhanced to account for increased volume of water received due to rain combined with snowmelt |
| 21/06/22 | Lobs Hole  | S2-FGJV-ENV-INC-1620 | Overtopping of sediment basin                         | Water level reduced to minimise overtopping. Water sampling was undertaken at impact site including upstream and downstream of the discharge point within the river and overtopped basin identifying the basin to have basic water as a result of TBM spoil reuse nearby.<br><br>Implementing further testing and characterization of TBM spoil materials outlining conditions for re-use to prevent re-occurrence.                                                                                                                                                            |
| 04/08/22 | Lobs Hole  | S2-FGJV-ENV-INC-1747 | Unauthorised release of process water entering river  | Additional pump utilised to increase pumping capacity and cease overtopping. Water sampling undertaken upstream and downstream of the discharge point<br><br>Review of dewatering plan and operations along Main Yard. Further surface works completed to enlarge leachate sump and pumping capacity was improved to facilitate efficient leachate water transport from Main Yard to appropriately lined turkeys nest, where it can be processed for treatment.                                                                                                                |
| 04/08/22 | Lobs Hole  | S2-FGJV-ENV-INC-1750 | Unauthorised release of process water entering river  | Water sampling undertaken upstream and downstream of the discharge point.<br><br>Review of dewatering plan and operations including the enlargement of leachate basin and completion of surface works to segregate dirty storm water from leachate. Pumping capacity was improved to facilitate efficient leachate water transport from Lick Hole Gully to an appropriately lined                                                                                                                                                                                              |

|          |                |                      |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|----------------|----------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |                |                      |                                                               | turkeys nest. where it can be processed by MAT Portal Construction Water Treatment Plant.                                                                                                                                                                                                                                                                                                                                                                                                        |
| 05/08/22 | Marica         | S2-FGJV-ENV-INC-1753 | Sediment laden water entering waterways.                      | High volumes of water overwhelmed the environmental controls onsite. In order to minimise the impact additional rock checks, woah-boys and coir logs were installed to slow down the water along with sediment fencing to contain runoff. Sampling of the affected area was undertaken.                                                                                                                                                                                                          |
| 24/08/22 | Lobs Hole      | S2-FGJV-ENV-INC-1805 | Unauthorised release of process water entering river.         | Immediate actions were taken to excavate the sump before the boundary to cease flow to the river. Water sampling undertaken upstream and downstream of the discharge point. Review of controls and operations including shotcreting the basin and establishing a standpipe to take leachate water from Mainyard. Completing capping and surface drainage of Mainyard. Specialist evaluation and establishment of a weekly inspection routine of north-eastern boundary to prevent re-occurrence. |
| 17/10/22 | Trunk Services | S2-FGJV-ENV-INC-2001 | Unauthorised release of drill fluid beyond clearing boundary. | Cease work was placed on drilling operations and immediate containment and remediation works commenced to prevent frac-out from entering river. Sandbags and coir logs were immediately installed to contain release and Vac truck was deployed to remediate impacted site and prevent further mobilisation of spilled fluid. Water sampling undertaken upstream and downstream of the discharge point.                                                                                          |

## 4.2. Recommendations

As noted throughout the report the 6 monthly report for June to November 2022 will be revised with groundwater information once these results have been received.

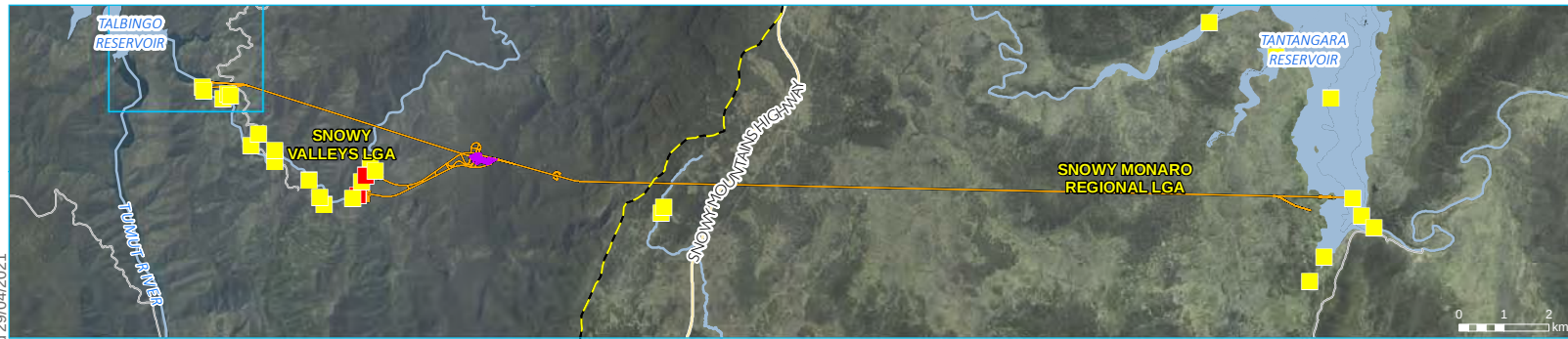
The oil and grease exceedances are being investigated to determine the source. Sampling processes have been reviewed and further training provided to the sampling team with no change to the results. Further assessment using sampling blanks, trip blanks, and inter-laboratory testing will be undertaken.

Andrew McLeod from SEEC is a qualified CPESC and will continue to carrying out ERS&D assessments across the project to monitor, review and improve water and ERS&D management.

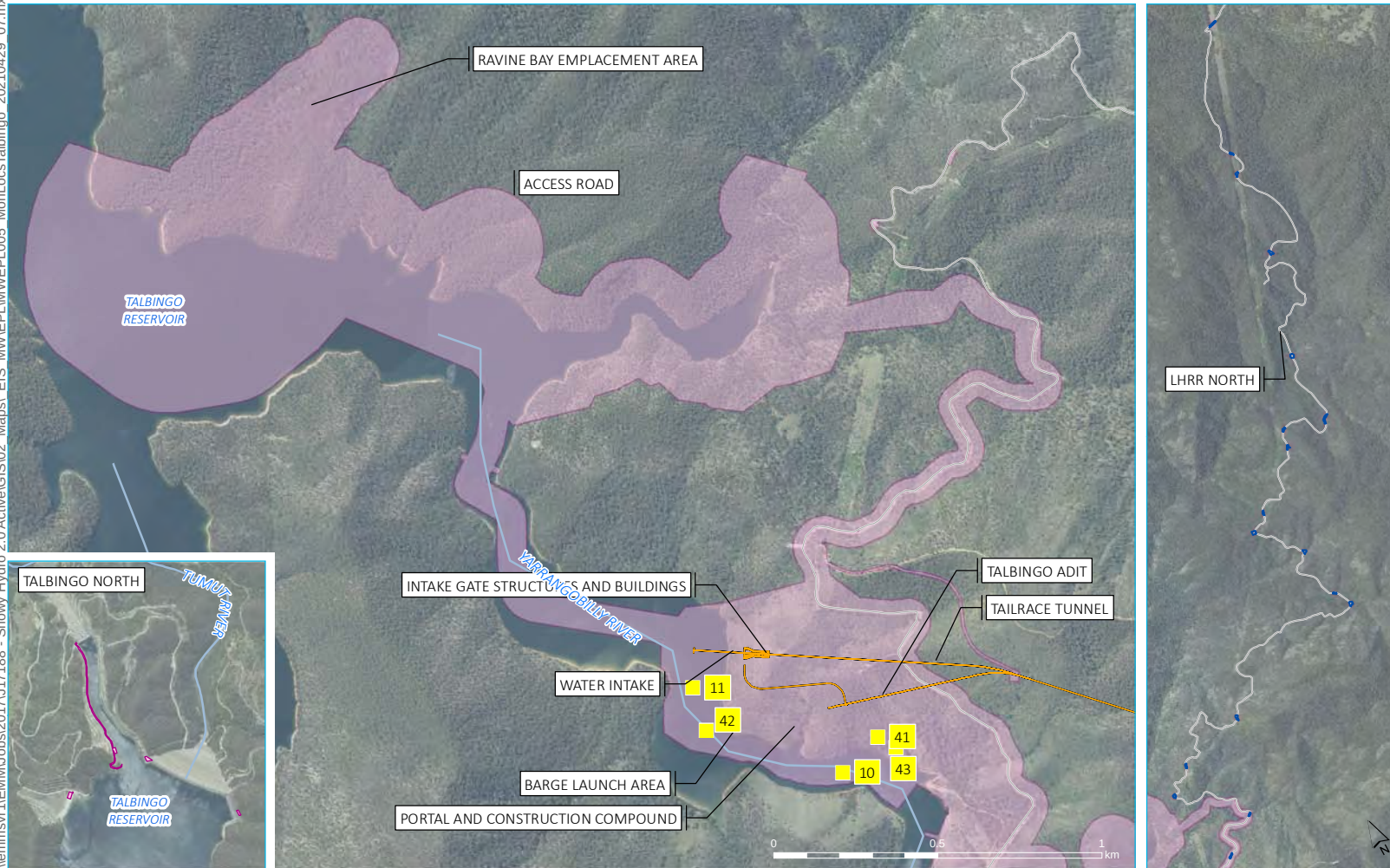


## APPENDIX A – SNOWY 2.0 – EPL SAMPLING LOCATIONS

\\emmsvr1\EMMAJ\obs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL005 MonLocsTalbingo 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Talbingo Reservoir

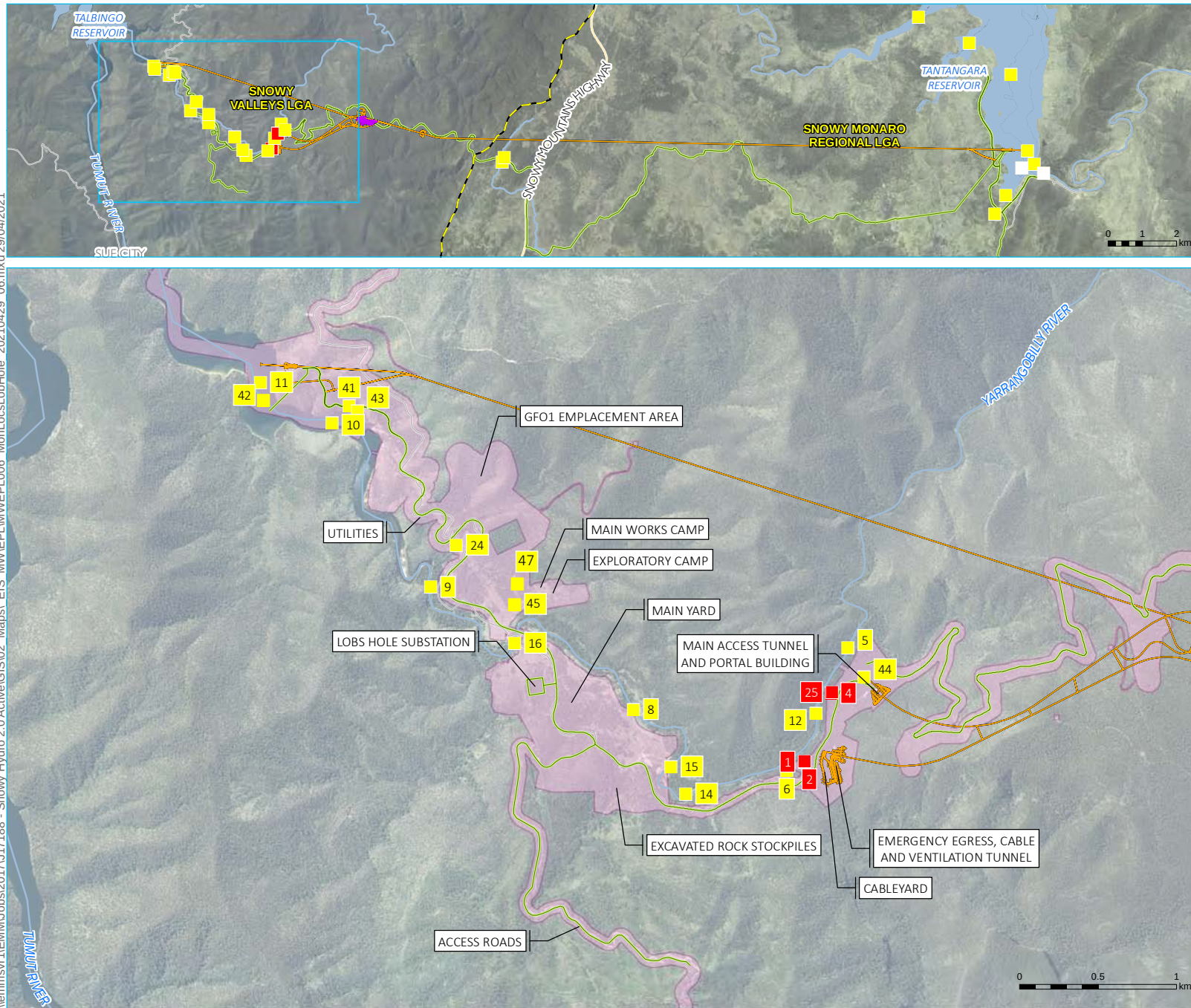
Snowy 2.0  
Main Works  
Figure 1

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL006 MonLocsLobHole 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Lobs Hole

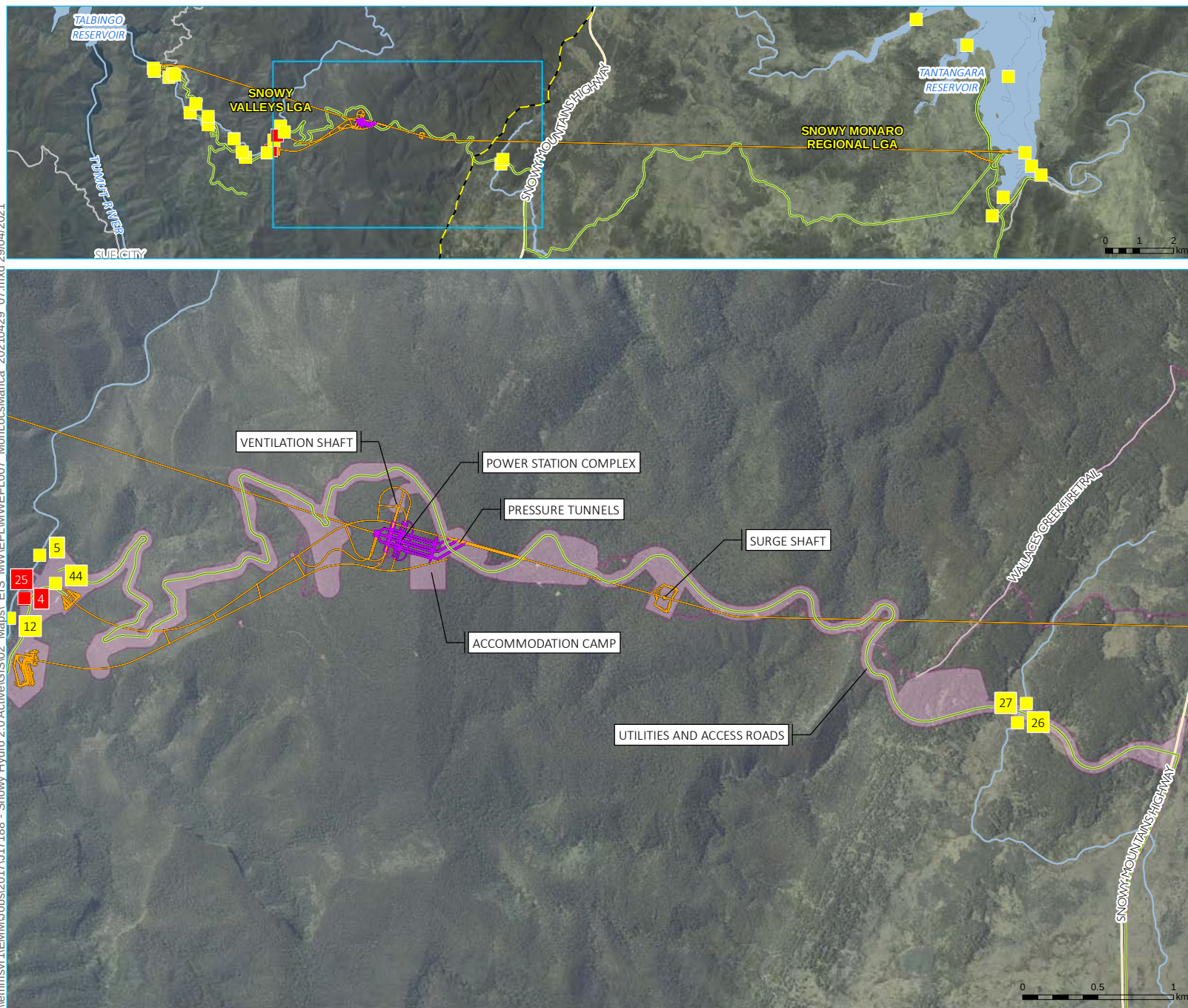
Snowy 2.0  
Main Works  
Figure 2

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL007 MonLocsMarica 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Marica

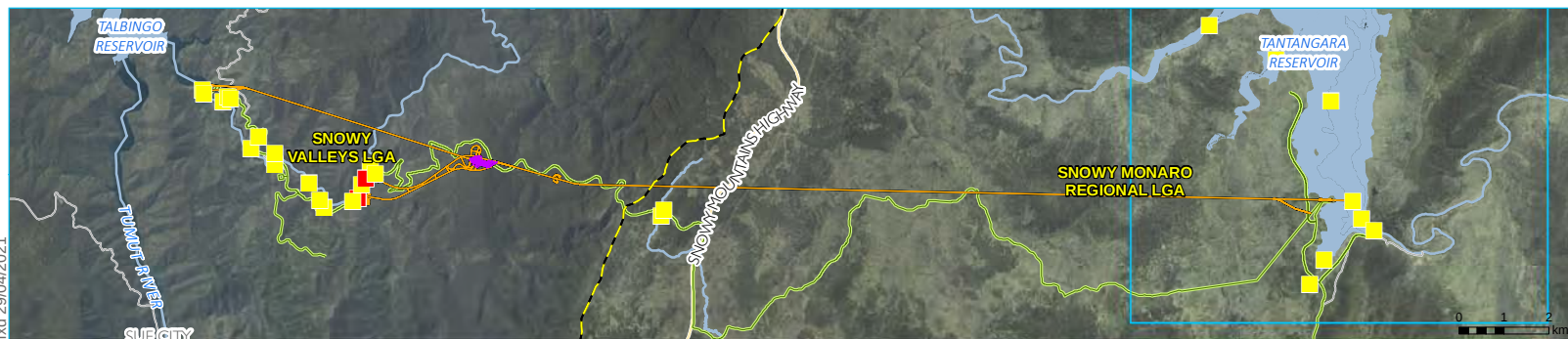
Snowy 2.0  
Main Works  
Figure 3



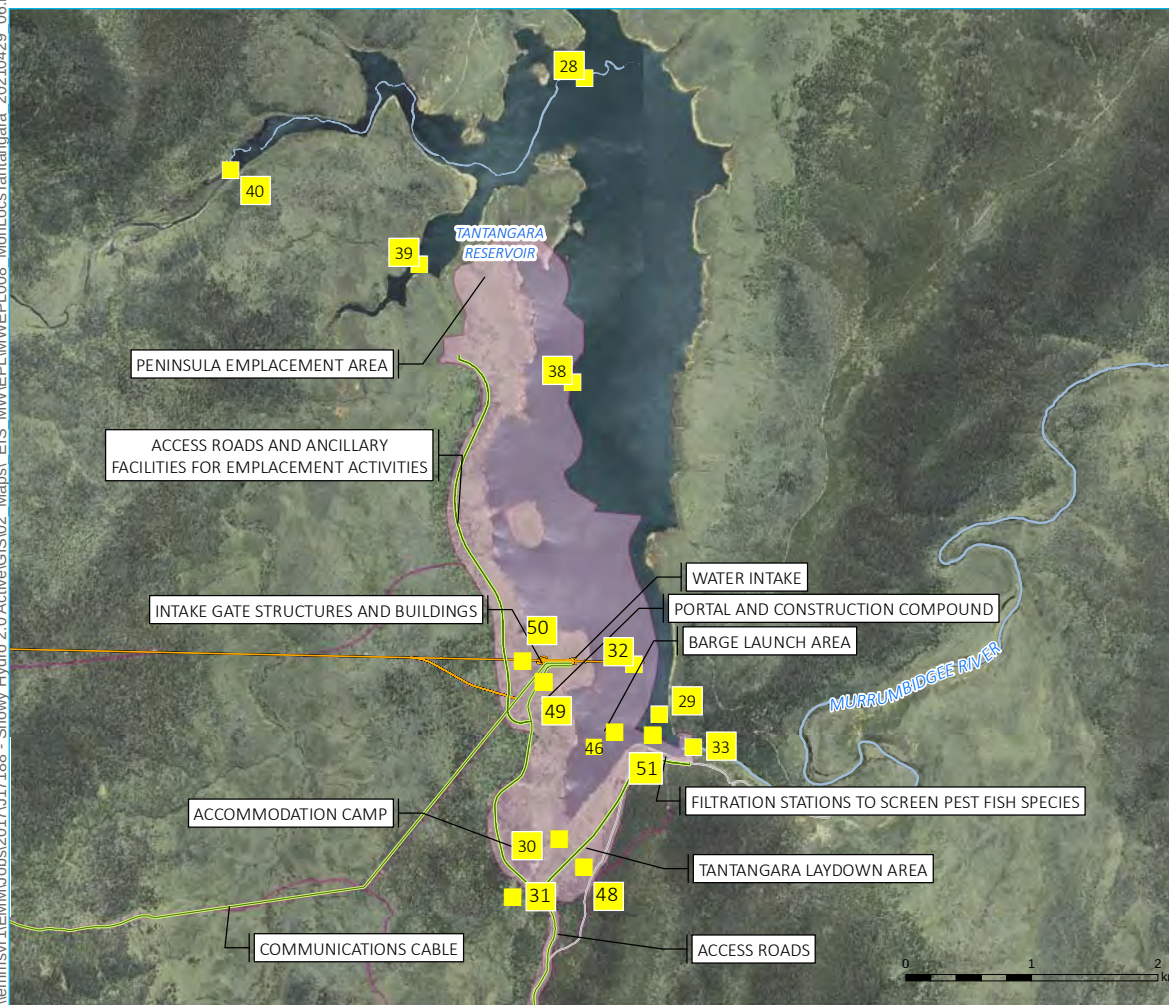
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55

\\emmsvr1\EMMJ\obs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL008 MonLocsTantangara 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Tantangara Reservoir

Snowy 2.0  
Main Works  
Figure 4

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL009 MonLocsRockForest\_20210429\_06.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)



- KEY**
- EPL monitoring point
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Rock Forest

Snowy 2.0  
Main Works  
Figure 5





## APPENDIX B – IN SITU RESULTS TABLES

June 2022 EPL 21266 In Situ Water Quality Measurements  
EPL Monthly Monitoring 3-30 June 2022

Table 1 - Surface Water Quality Data  
River and Minor Watercourses

| Table 1 - Surface Water Quality Data<br>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                                | Context                                                                                                                                                                                                         |
| 11/6/2022, 8:30 am                                                   | EPL5        | Yarrangobilly River, upstream of the exploratory tunnel and construction pad                 | 7.2                                   | 88.5     | 10.7      | 52.0       | 34.0       | 6.0       | 196.0      | -               | High flowing river, fast flow. Turbidity reading error. | This location is upstream of works and is therefore representative of background conditions.                                                                                                                    |
| 11/6/2022, 10:00 am                                                  | EPL6        | Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence                | 8.5                                   | 87.7     | 10.3      | 50.0       | 32.0       | 6.1       | 232.0      | 24.3            | High fast flowing water. Brown turbid.                  | pH and DO are generally representative of the background conditions in June 2022 and within range of baseline data.                                                                                             |
| 11/6/2022, 12:30 pm                                                  | EPL8        | Yarrangobilly River, downstream of Lick Hole Gully                                           | 7.6                                   | 84.8     | 10.1      | 62.0       | 40.0       | 7.0       | 209.0      | 5.7             | Fast flowing, slight turb.                              | DO is generally representative of the background conditions in June 2022 and within range of baseline data.                                                                                                     |
| 29/6/2022, 8:10 am                                                   | EPL9        | Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir | 4.7                                   | 109.9    | 14.1      | 61.0       | 40.0       | 7.5       | 241.0      | 5.0             | Medium flow, clear water.                               | -                                                                                                                                                                                                               |
| 11/6/2022, 9:00 am                                                   | EPL12       | Yarrangobilly River, immediately downstream of portal pad                                    | 7.0                                   | 84.4     | 10.3      | 55.0       | 35.0       | 6.0       | 210.0      | -               | Fast flowing water looks slightly green turbid.         | pH and DO are generally representative of the background conditions in June 2022 and within range of baseline data.                                                                                             |
| 11/6/2022, 10:30 am                                                  | EPL14       | Yarrangobilly River, downstream of road construction areas                                   | 7.7                                   | 85.1     | 10.2      | 74.0       | 48.0       | 7.0       | 192.0      | 6.5             | Water level high, fast flowing. Brownish turb.          | DO is generally representative of the background conditions in June 2022 and within range of baseline data.                                                                                                     |
| 11/6/2022, 11:00 am                                                  | EPL15       | Yarrangobilly River, downstream of road construction areas                                   | 7.5                                   | 84.6     | 10.1      | 54.0       | 35.0       | 7.0       | 197.0      | 5.6             | Fast flowing, slight turbid.                            | DO is generally representative of the background conditions in June 2022 and within range of baseline data.                                                                                                     |
| 11/6/2022, 1:00 pm                                                   | EPL16       | Yarrangobilly River, downstream of road construction areas                                   | 7.6                                   | 85       | 10.2      | 56.0       | 36.0       | 6.9       | 213.0      | 6.3             | High flow and slight turbid.                            | DO is generally representative of the background conditions in June 2022 and within range of baseline data.                                                                                                     |
| 11/6/2022, 2:00 pm                                                   | EPL24       | Yarrangobilly River tributary (Watercourse 2), directly downstream of road                   | 10.6                                  | 82.9     | 9.2       | 74.0       | 48.0       | 7.1       | 165.0      | 103.0           | Very turbid, high flow.                                 | DO is representative of background conditions and significantly elevated compared to previous months. The turbidity is consistently high in this location though the spring upstream was also turbid.           |
| 14/6/2022, 11:59 am                                                  | EPL26       | Eucumbene River downstream of Marica Road                                                    | 5.5                                   | 84.5     | 10.7      | 17.3       | 17.6       | 6.5       | 230.3      | 3.2             | -                                                       | Low DO, pH, and EC are generally representative of background conditions for June 2022 and are consistent with previous results.                                                                                |
| 14/6/2022, 12:35 pm                                                  | EPL27       | Eucumbene River upstream of Marica Road                                                      | 5.7                                   | 83.3     | 10.5      | 17.3       | 17.6       | 6.5       | 220.2      | 1.1             | -                                                       | This location is upstream of works and is therefore representative of background conditions.                                                                                                                    |
| 3/6/2022, 1:57 pm                                                    | EPL30       | Kellys Plain Creek, downstream of accommodation camp and laydown areas                       | 6.4                                   | 85.2     | 10.8      | 17.2       | 18.2       | 7.9       | 185.0      | 12.3            | -                                                       | Low DO and EC are generally representative of background conditions for June 2022 and are consistent with previous results.                                                                                     |
| 3/6/2022, 1:26 pm                                                    | EPL31       | Kellys Plain Creek, upstream of accommodation camp and laydown areas                         | 5.2                                   | 91.7     | 11.6      | 14.3       | 15.0       | 7.2       | 190.0      | 7.0             | Clear water, snow cover.                                | Low EC is representative of background conditions for June 2022 and are consistent with previous results.                                                                                                       |
| 3/6/2022, 3:36 pm                                                    | EPL33       | Murrumbidgee River, downstream of Tantangara reservoir outlet                                | 7.3                                   | 91.1     | 11.0      | 16.3       | 18.3       | 7.5       | 182.7      | 2.7             | -                                                       | Low EC is representative of background conditions for June 2022 and are consistent with previous results.                                                                                                       |
| 3/6/2022, 2:48 pm                                                    | EPL34       | Nungar Creek, upstream of Tantangara Road                                                    | 2.1                                   | 90.9     | 12.5      | 8.1        | 9.10       | 7.2       | 199.8      | 3.0             | -                                                       | This location is upstream of works and is therefore representative of background conditions.                                                                                                                    |
| 3/6/2022, 2:37 pm                                                    | EPL35       | Nungar Creek, downstream of Tantangara Road                                                  | 2.1                                   | 124.0    | 17.1      | 8.2        | 9.75       | 7.5       | 189.4      | 3.4             | High water level, fast flow                             | Low EC is representative of background conditions for June 2022 and are consistent with previous results. The increase in DO was potentially due to the increase in flow and water level but will be monitored. |
| 18/6/2022, 2:40 pm                                                   | EPL36       | Camerons Creek, upstream of works in Rock Forest                                             | 5.0                                   | 88.2     | 11.3      | 21.4       | 22.8       | 6.3       | 243.4      | 3.7             | -                                                       | This location is upstream of works and is therefore representative of background conditions.                                                                                                                    |
| 24/6/2022, 7:43 am                                                   | EPL37       | Camerons Creek, downstream of works in Rock Forest                                           | 6.1                                   | 101.4    | 12.6      | 22.3       | 22.8       | 6.0       | 247.1      | 8.7             | QA ROK1.                                                | Low EC and pH are representative of background conditions in June 2022 and consistent with previous results.                                                                                                    |

Table 2 - Reservoir Water Quality Data  
Talbingo and Tantangara Reservoirs

| Table 2 - Reservoir Water Quality Data<br>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                                                                                                                                                                                            |
| 12/6/2022, 3:40 pm                                                           | EPL10       | Talbingo Reservoir, downstream of road works and upstream of water intake point                                                                                     | 10.0                                     | 78.3       | 8.9       | 31.0       | 20.0            | 6.2  | 263.0      | -               | Clear water, rain last 48 hours. Turbidity reading error. | pH and DO are generally representative of the background conditions in June 2022. EC will be monitored.                                                                                            |
| 12/6/2022, 3:25 pm                                                           | EPL11       |                                                                                                                                                                     | Talbingo Reservoir, downstream of outlet | 10.0       | 83.8      | 9.5        | 30.0            | 20.0 | 6.3        | 242.0           | -                                                         | Clear water, rain last 48 hrs. Turbidity reading error.                                                                                                                                            |
| 15/6/2022, 2:12 pm                                                           | EPL28       | Tatangara Reservoir, upstream in the mouth of the Murrumbidgee River                                                                                                | 5.1                                      | 108.7      | 13.8      | 11.4       | 11.7            | 6.8  | 240.9      | 3.5             | -                                                         | This location is upstream of works and is therefore representative of background conditions.                                                                                                       |
| 15/6/2022, 3:16 pm                                                           | EPL29       | Tatangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River                                                                              | 5.1                                      | 89.3       | 11.4      | 14.4       | 14.95           | 6.1  | 263.5      | 4.0             | -                                                         | Low pH and EC are generally representative of the background conditions in June 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |
| 15/6/2022, 3:06 pm                                                           | EPL32       | Tatangara Reservoir, Tantangara Intake. Downstream of construction works                                                                                            | 4.8                                      | 88         | 11.3      | 14.0       | 14.95           | 6.1  | 266.0      | 3.5             | Clear.                                                    | Low pH and EC are generally representative of the background conditions in June 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |
| 15/6/2022, 2:56 pm                                                           | EPL38       | Tatangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities | 4.3                                      | 87.8       | 11.4      | 12.3       | 13              | 5.9  | 277.6      | 4.6             | -                                                         | Low pH and EC are generally representative of the background conditions in June 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |
| 15/6/2022, 2:34 pm                                                           | EPL39       | Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works            | 4.8                                      | 89.8       | 11.5      | 9.6        | 10.4            | 5.9  | 260.2      | 3.1             | -                                                         | Low pH and EC are generally representative of the background conditions in June 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |
| 15/6/2022, 2:42 pm                                                           | EPL40       | Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works                    | 5.1                                      | 86.4       | 11.0      | 11.7       | 12.35           | 6.0  | 264.2      | 2.9             | -                                                         | Low pH and EC are generally representative of the background conditions in June 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |
| -                                                                            | EPL51       | Tatangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet                                                                                              | -                                        | -          | -         | -          | -               | -    | -          | -               | -                                                         | Water not collected from this location in June 2022.                                                                                                                                               |

Table 3 - Treated Water Quality Data  
Talbingo

| Table 3 - Treated Water Quality Data<br><i>Talbingo</i> |             |                                                                                                                                      | 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 | -          | -               |                |                                                     |
| 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                                             |
| 29/6/2022, 9:30 am                                      | EPL41       | Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir. | 15.7                                  | 101.1  | 10.0      | 38.8       | 25.20      | 7.6       | 223.0      | 0.9             | Clear water.   | No discharge was occurring at the time of sampling. |

Table 4 - Treated Wate  
Tatangara

| Table 4 - Treated Water<br>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 | -          | -               |                |                                                     |
| 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                                             |
| 30/6/2022, 12:15 pm                   | EPL50       | Tantangara STP/PWTP Final Effluent Quality Monitoring Point, Downstream of final treatment, prior to discharge to Tantangara Reservoir. | 4.0                                   | 132.2  | 17.3      | 343        | 372.45     | 7.6       | 232.2      | 1.3             | -              | No discharge was occurring at the time of sampling. |

Notes:

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.

July 2022 EPL 21266 In Situ Water Quality Measurements  
EPL Monthly Monitoring July 2022

Table 1 - Surface Water Quality Data  
River and Minor Watercourses

| Table 1 - Surface Water Quality Data<br>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                                     | Context                                                                                                                                                                                                                                                    |
| 2/7/2022, 8:15 am                                                    | EPL5        | Yarrangobilly River, upstream of the exploratory tunnel and construction pad                 | 7.08                                  | 104.8    | 12.7      | 62         | 40         | 6.88      | 148        | 0               | Turbidity sensor malfunction                                 | This location is upstream of works and is therefore representative of background conditions.                                                                                                                                                               |
| 2/7/2022, 9:10 am                                                    | EPL6        | Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence                | 7.33                                  | 117.5    | 14.14     | 61         | 40         | 6.4       | 205        | 6.5             | Used turbidity tube                                          | pH and DO are generally representative of the background conditions in July 2022 and within range of baseline data.                                                                                                                                        |
| 2/7/2022, 2:20 pm                                                    | EPL8        | Yarrangobilly River, downstream of Lick Hole Gully                                           | 8.03                                  | 104.4    | 12.35     | 69         | 45         | 6.94      | 213        | 0               | Turbidity sensor malfunction                                 | -                                                                                                                                                                                                                                                          |
| 2/7/2022, 3:15 pm                                                    | EPL9        | Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir | 8.07                                  | 106.6    | 42        | 65         | 12.6       | 6.66      | 177        | 5               |                                                              | -                                                                                                                                                                                                                                                          |
| 2/7/2022, 8:40 am                                                    | EPL12       | Yarrangobilly River, immediately downstream of portal pad                                    | 6.87                                  | 108      | 13.15     | 64         | 42         | 6.69      | 159        | 0               | Turbidity sensor malfunction                                 | -                                                                                                                                                                                                                                                          |
| 2/7/2022, 11:30 am                                                   | EPL14       | Yarrangobilly River, downstream of road construction areas                                   | 7.62                                  | 108.5    | 12.96     | 64         | 42         | 6.92      | 190        | 0               | Turbidity sensor malfunction                                 | -                                                                                                                                                                                                                                                          |
| 2/7/2022, 12:15 pm                                                   | EPL15       | Yarrangobilly River, downstream of road construction areas                                   | 7.62                                  | 105.1    | 12.57     | 62         | 40         | 6.68      | 208        | 0               | Turbidity sensor malfunction                                 | -                                                                                                                                                                                                                                                          |
| 2/7/2022, 4:30 pm                                                    | EPL16       | Yarrangobilly River, downstream of road construction areas                                   | 8.08                                  | 104.4    | 12.34     | 64         | 42         | 6.68      | 201        | 5               | QA taken here                                                | -                                                                                                                                                                                                                                                          |
| 2/7/2022, 2:55 pm                                                    | EPL24       | Yarrangobilly River tributary (Watercourse 2), directly downstream of road                   | 9.95                                  | 94.9     | 10.72     | 72         | 47         | 6.64      | 123        | 33              | -                                                            | Turbidity is consistently high in this location.                                                                                                                                                                                                           |
| 4/7/2022, 6:12 am                                                    | EPL26       | Eucumbene River downstream of Marica Road                                                    | 6.2                                   | 80.7     | 10.0      | 12.9       | 13         | 6.5       | 282.9      | 20.4            | -                                                            | Low DO, pH, and EC are generally representative of background conditions for July 2022 and are consistent with previous results.                                                                                                                           |
| 4/7/2022, 6:14 am                                                    | EPL27       | Eucumbene River upstream of Marica Road                                                      | 6.1                                   | 78.3     | 9.7       | 13.0       | 13         | 6.4       | 279.5      | 6.5             | -                                                            | This location is upstream of works and is therefore representative of background conditions.                                                                                                                                                               |
| 3/7/2022, 2:40 pm                                                    | EPL30       | Kellys Plain Creek, downstream of accommodation camp and laydown areas                       | 5.8                                   | 82.9     | 10.4      | 12.7       | 13         | 7.9       | 236.8      | 9.0             | Steady flow, clear water. Slightly overcast, light SSE wind. | Low DO and EC are generally representative of background conditions for July 2022 and are consistent with previous results.                                                                                                                                |
| 3/7/2022, 2:35 pm                                                    | EPL31       | Kellys Plain Creek, upstream of accommodation camp and laydown areas                         | 5.8                                   | 81.8     | 10.2      | 13.0       | 13.65      | 7.2       | 238.2      | 10.7            | Steady flow, clear water. Slightly overcast, light SSE wind. | Low DO and EC are generally representative of background conditions for July 2022 and are consistent with previous results.                                                                                                                                |
| 3/7/2022, 2:47 pm                                                    | EPL33       | Murrumbidgee River, downstream of Tantangara reservoir outlet                                | 5.1                                   | 78.7     | 10.0      | 12.1       | 13         | 7.5       | 249.6      | 4.4             | Steady flow, clear water. Slightly overcast, light SSE wind. | Low DO and EC are generally representative of background conditions for July 2022 and are consistent with previous results.                                                                                                                                |
| 3/7/2022, 2:48 pm                                                    | EPL34       | Nungar Creek, upstream of Tantangara Road                                                    | 4                                     | 79.8     | 10.5      | 7.9        | 8.45       | 7.2       | 263.4      | 7.9             | Low flow, clear water. Slightly overcast, light SSE wind.    | This location is upstream of works and is therefore representative of background conditions.                                                                                                                                                               |
| 3/7/2022, 2:50 pm                                                    | EPL35       | Nungar Creek, downstream of Tantangara Road                                                  | 3.9                                   | 116.1    | 15.3      | 8.8        | 9.75       | 7.0       | 266.6      | 8.1             | Low flow, clear water. Slightly overcast, light SSE wind.    | Low EC is representative of background conditions for July 2022 and are consistent with previous results. The increase in DO was potentially due to the increase in water flow and is consistent with June 2000 results but will continue to be monitored. |
| 11/7/2022, 1:17pm                                                    | EPL36       | Camerons Creek, upstream of works in Rock Forest                                             | 1.8                                   | 96.8     | 13.5      | 17.9       | 20.8       | 7.3       | 261.2      | 13.2            | Ligh SSW breeze, partly cloudy. Low flow, clear water.       | This location is upstream of works and is therefore representative of background conditions.                                                                                                                                                               |
| 11/7/2022, 1:20pm                                                    | EPL37       | Camerons Creek, downstream of works in Rock Forest                                           | 2.9                                   | 102.8    | 13.9      | 22.5       | 25.35      | 7.4       | 201.7      | 7.3             | Ligh SSW breeze, partly cloudy. Low flow, clear water.       | Low EC is representative of background conditions in July 2022 and consistent with previous results.                                                                                                                                                       |

Table 2 - Reservoir Water Quality Data  
Talbingo and Tantangara Reservoirs

| Table 2 - Reservoir Water Quality Data<br>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                                                                                      |
| 3/7/2022, 11:15 am                                                           | EPL10       | Talbingo Reservoir, downstream of road works and upstream of water intake point                                                                                      | 9.4                                   | 91.3     | 11.6      | 32.6       | 41         | 7.35      | 159        | 2               | Clear water                                                        | -                                                                                            |
| 3/7/2022, 11:56 am                                                           | EPL11       | Talbingo Reservoir, downstream of outlet                                                                                                                             | 9.4                                   | 91.3     | 80        | 35.1       | 15         | 7.38      | 100        | 3               | Clear water                                                        | -                                                                                            |
| 8/7/2022, 10:44 am                                                           | EPL28       | Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River                                                                                                | 4.7                                   | 81.6     | 10.5      | 10.9       | 11.7       | 7.7       | 168.8      | 4.1             | Clear water, fine weather. Very light NE winds, glassy conditions. | This location is upstream of works and is therefore representative of background conditions. |
| 8/7/2022, 4:05 pm                                                            | EPL29       | Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River                                                                              | 4.9                                   | 81.5     | 10.4      | 11.9       | 12.35      | 6.4       | 291.0      | 4.7             | Clear water, fine weather. Very light NE winds, glassy conditions. | This location is upstream of works and is therefore representative of background conditions. |
| 8/7/2022, 4:03 pm                                                            | EPL32       | Tantangara Reservoir, Tantangara Intake. Downstream of construction works                                                                                            | 4.9                                   | 88.7     | 11.4      | 11.9       | 12.35      | 6.4       | 293.9      | 4.7             | Clear water, fine weather. Very light NE winds, glassy conditions. | Low DO is representative of background conditions in July 2022.                              |
| 8/7/2022, 3:57 pm                                                            | EPL38       | Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities | 4.8                                   | 85.5     | 11.0      | 11.9       | 12.35      | 6.5       | 306.0      | 8.8             | Clear water, fine weather. Very light NE winds, glassy conditions. | Low DO is representative of background conditions in July 2022.                              |
| 8/7/2022, 3:46 pm                                                            | EPL39       | Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works             | 4.6                                   | 105.3    | 13.6      | 9.9        | 10.4       | 7.2       | 268.7      | 5.4             | Clear water, fine weather. Very light NE winds, glassy conditions. | -                                                                                            |
| 8/7/2022, 3:55 pm                                                            | EPL40       | Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works                     | 4.6                                   | 93       | 12.0      | 9.8        | 10.4       | 7.1       | 267.3      | 5.7             | Clear water, fine weather. Very light NE winds, glassy conditions. | This location is upstream of works and is therefore representative of background conditions. |

Table 3 - Treated Water Quality Data Talbingo

| Table 3 - Treated Water Quality Data <i>Talbingo</i> |             |                                                                                                                                      |           |        |           |            |            |           |            |                 |            |      |            |                 |                |         |
|------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|-----------|------------|------------|-----------|------------|-----------------|------------|------|------------|-----------------|----------------|---------|
| 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 |
| 4/7/2022, 8:20 am                                    | EPL41       | Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir. |           |        |           |            | 12.06      | 84.5      | 9.07       | 93.6            | 59.9       | 7.61 | 249        | 1.00            | Clear water    | -       |

Table 4 - Treated Water Quality Data Tantangara

| Table 4 - Treated Water Quality Data<br>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                                             |
| 30/6/2022, 12:15 pm                                | EPL50       | Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir. | 3.7                                   | 67.7   | 8.9       | 337        | 370.50     | 7.3       | 231.0      | 1.0             | -              | No discharge was occurring at the time of sampling. |

Notes:

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.

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Table 1 - Surface Water Quality Data  
River and Minor Watercourses

| Table 1 - Surface Water Quality Data<br>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                                                                                                                                          |
| 7/8/2022, 11:54 am                                                   | EPL5        | Yarrangobilly River, upstream of the exploratory tunnel and construction pad                 | 8.28                                  | 95.7     | 11.25     | 49         | 32         | 6.45      | 242        | 25              | Samples collected during significant rain event 118 mm over 7 days                     | This location is upstream of works and is therefore representative of background conditions.                                                     |
| 7/8/2022, 12:19 pm                                                   | EPL6        | Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence                | 8.9                                   | 97.2     | 11.26     | 55         | 36         | 6.60      | 245        | 40              | Samples collected during significant rain event 118 mm over 7 days                     | The elevated turbidity is likely a result of significant rainfall and ground saturation on site                                                  |
| 7/8/2022, 12:42 pm                                                   | EPL8        | Yarrangobilly River, downstream of Lick Hole Gully                                           | 8.59                                  | 95.7     | 11.17     | 65         | 42         | 6.60      | 247        | 30              | Samples collected during significant rain event 118 mm over 7 days                     | The elevated turbidity is likely a result of significant rainfall and ground saturation on site                                                  |
| 7/8/2022, 2:42 pm                                                    | EPL9        | Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir | 9.03                                  | 96.5     | 37        | 56         | 37         | 6.65      | 256        | 40              | Samples collected during significant rain event 118 mm over 7 days                     | The elevated turbidity is likely a result of significant rainfall and ground saturation on site                                                  |
| 7/8/2022, 11:00 am                                                   | EPL12       | Yarrangobilly River, immediately downstream of portal pad                                    | 7.83                                  | 94.2     | 11.21     | 52         | 34         | 6.45      | 232        | 19              | Samples collected during significant rain event 118 mm over 7 days                     | pH is representative of the background conditions in August 2022 and within range of baseline data.                                              |
| 6/8/2022, 1:01 pm                                                    | EPL14       | Yarrangobilly River, downstream of road construction areas                                   | 8.35                                  | 92.7     | 10.88     | 79         | 51         | 7.12      | 235        | 75              | Samples collected during significant rain event 118 mm over 7 days                     | The elevated turbidity is likely a result of significant rainfall and ground saturation on site                                                  |
| 6/8/2022, 1:03 pm                                                    | EPL15       | Yarrangobilly River, downstream of road construction areas                                   | 8.2                                   | 95.2     | 11.22     | 53         | 34         | 7.13      | 220        | 110             | Samples collected during significant rain event 118 mm over 7 days                     | The elevated turbidity is likely a result of significant rainfall and ground saturation on site and turbidity at this location is often elevated |
| 7/8/2022, 1:09 pm                                                    | EPL16       | Yarrangobilly River, downstream of road construction areas                                   | 8.64                                  | 96.4     | 11.24     | 56         | 36         | 6.57      | 248        | 35              | Samples collected during significant rain event 118 mm over 7 days                     | The elevated turbidity is likely a result of significant rainfall and ground saturation on site                                                  |
| 6/8/2022, 1:48 pm                                                    | EPL24       | Yarrangobilly River tributary (Watercourse 2), directly downstream of road                   | 10.93                                 | 95.3     | 10.52     | 52         | 34         | 6.77      | 236        | 50              | Samples collected during significant rain event 118 mm over 7 days                     | The elevated turbidity is likely a result of significant rainfall and ground saturation on site                                                  |
| 5/8/2022, 10:30 am                                                   | EPL26       | Eucumbene River downstream of Marica Road                                                    | 5.6                                   | 86.5     | 10.9      | 13.2       | 13.6       | 6.77      | 27.8       | 15              | Samples collected during significant rain event 118 mm over 7 days                     | Low DO is representative of background conditions for August 2022 and are consistent with previous results.                                      |
| 5/8/2022, 10:50 am                                                   | EPL27       | Eucumbene River upstream of Marica Road                                                      | 5.7                                   | 85.3     | 10.7      | 13.3       | 13.7       | 6.53      | 50.7       | 2.8             | Samples collected during significant rain event 118 mm over 7 days                     | This location is upstream of works and is therefore representative of background conditions.                                                     |
| 19/8/2022, 2:18 pm                                                   | EPL30       | Kellys Plain Creek, downstream of accommodation camp and laydown areas                       | 7.8                                   | 93.1     | 11.1      | 11.1       | 10.4       | 5.93      | 283.1      | 20              | Showers, strong flow, clear water, strong NNW winds (20-30 km), showers, partly cloudy | Low DO, pH, and EC are generally representative of background conditions for August 2022 and are consistent with previous results.               |
| 19/8/2022, 2:03 pm                                                   | EPL31       | Kellys Plain Creek, upstream of accommodation camp and laydown areas                         | 7.7                                   | 93.7     | 11.1      | 11.8       | 11.7       | 5.85      | 292.0      | 11              | Showers, strong flow, clear water, strong NNW winds (20-30 km), showers, partly cloudy | Low DO, pH, and EC are generally representative of background conditions for August 2022 and are consistent with previous results.               |
| 19/8/2022, 1:47 pm                                                   | EPL33       | Murrumbidgee River, downstream of Tantangara reservoir outlet                                | 6.3                                   | 98.9     | 12.2      | 9.4        | 9.75       | 6.18      | 275.2      | 6.2             | Showers, steady flow, clear water, strong NNW winds (20-30 km), showers, partly cloudy | Low DO, pH, and EC are generally representative of background conditions for August 2022 and are consistent with previous results.               |
| 19/8/2022, 12:56 pm                                                  | EPL34       | Nungar Creek, upstream of Tantangara Road                                                    | 5.6                                   | 96.0     | 12.1      | 7.2        | 7.15       | 6.55      | 220.0      | 3.9             | Showers, strong flow, clear water, strong NNW winds (20-30 km), showers, partly cloudy | -                                                                                                                                                |
| 19/8/2022, 12:49 pm                                                  | EPL35       | Nungar Creek, downstream of Tantangara Road                                                  | 6.5                                   | 98.2     | 12.3      | 7.2        | 7.8        | 6.99      | 187.1      | 3.2             | Showers, strong flow, clear water, strong NNW winds (20-30km), showers, partly cloudy  | -                                                                                                                                                |
| 11/7/2022, 1:20 pm                                                   | EPL36       | Camerons Creek, upstream of works in Rock Forest                                             | 1.8                                   | 96.8     | 13.5      | 17.9       | 20.8       | 7.34      | 261.2      | 13              | -                                                                                      | -                                                                                                                                                |
| 11/7/2022, 1:17 pm                                                   | EPL37       | Camerons Creek, downstream of works in Rock Forest                                           | 2.9                                   | 102.8    | 13.9      | 22.5       | 25.35      | 7.36      | 201.7      | 7.3             | -                                                                                      | -                                                                                                                                                |

Table 2 - Reservoir Water Quality Data  
Talbingo and Tantangara Reservoirs

| Table 2 - Reservoir Water Quality Data<br>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                                                                                                                                                                                              |
| 21/8/2022, 11:43 am                                                          | EPL10       | Talbingo Reservoir, downstream of road works and upstream of water intake point                                                                                      | 10.8                                  | 105.1    | -         | 51.9       | 34         | 7.7       | -          | -               | Error with YSI - fields not completed weren't available                 | -                                                                                                                                                                                                    |
| 21/8/2022, 11:28 am                                                          | EPL11       | Talbingo Reservoir, downstream of outlet                                                                                                                             | 10.4                                  | 101      | -         | 51.2       | 33         | 7.6       | -          | -               | Error with YSI - fields not completed weren't available                 | -                                                                                                                                                                                                    |
| 21/8/2022, 11:59 am                                                          | EPL28       | Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River                                                                                                | 6.6                                   | 97.3     | 12.0      | 10.4       | 10.4       | 5.9       | 280.9      | 3.9             | QA_TAN done here                                                        | This location is upstream of works and is therefore representative of background conditions.                                                                                                         |
| 21/8/2022, 12:27 pm                                                          | EPL29       | Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River                                                                              | 6.4                                   | 93.8     | 11.6      | 9.4        | 9.75       | 5.8       | 279.4      | 5.6             | Clear water, brisk NE wind (10-15km), partly cloudy, scattered showers. | This location is upstream of works and is therefore representative of background conditions.                                                                                                         |
| 21/8/2022, 12:22 pm                                                          | EPL32       | Tantangara Reservoir, Tantangara Intake. Downstream of construction works                                                                                            | 6.3                                   | 88.5     | 11.0      | 10.4       | 10.4       | 5.7       | 284.0      | 6.2             | Clear water, brisk NE wind (10-15km), partly cloudy, scattered showers. | Low pH and EC are generally representative of the background conditions in August 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |
| 21/8/2022, 12:14 pm                                                          | EPL38       | Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities | 6.3                                   | 85.7     | 10.6      | 10.2       | 10.4       | 5.9       | 283.2      | 5.6             | Clear water, brisk NE wind (10-15km), partly cloudy, scattered showers. | Low pH and EC are generally representative of the background conditions in August 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |
| 21/8/2022, 11:25 am                                                          | EPL39       | Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works             | 6.1                                   | 102.5    | 12.7      | 9.1        | 9.1        | 6.7       | 229.7      | 3.4             | Clear water, brisk NE wind (10-15km), partly cloudy, scattered showers. | -                                                                                                                                                                                                    |
| 21/8/2022, 11:44 am                                                          | EPL40       | Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works                     | 6.2                                   | 90.4     | 11.2      | 10.7       | 11.05      | 6.1       | 264.3      | 3.7             | Clear water, brisk NE wind (10-15km), partly cloudy, scattered showers. | This location is upstream of works and is therefore representative of background conditions.                                                                                                         |
| 21/8/2022, 12:37 pm                                                          | EPL 51      | Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet                                                                                              | 6.4                                   | 88.9     | 11.0      | 9.5        | 9.75       | 5.9       | 221.4      | 6.3             | Clear water, brisk NE wind (10-15km), partly cloudy, scattered showers. | Low pH and EC are generally representative of the background conditions in August 2022. DO is only slightly less than criteria though a decreasing trend is becoming apparent and will be monitored. |

Table 3 - Treated Water Quality Data Talbingo

| 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                                          |
| 21/8/2022, 12:25 pm                              | EPL41       | Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir. | 18.51      | 113.4      | 10.6      | 657        | 420             | 9.35 | 215        | 1.70            | -              | There was no discharge 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                                          |
|---------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|-----------|------------|------------|-----|------------|-----------------|----------------|--------------------------------------------------|
| 19/8/2022, 12:50 pm | EPL50       | Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir. | 10.4      | 61.1   | 6.8       | 7          | 5.85       | 6.3 | 277.5      | 0.6             | -              | There was no discharge at the time of sampling.. |

Table 4 - Groundwater Quality Data  
Groundwater

| Water Quality Objectives (see note 4) |        |           |            |            |           |            |                 |
|---------------------------------------|--------|-----------|------------|------------|-----------|------------|-----------------|
| 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 | Field Comments / Context | Context |
|----------------------|-------------|----------------------|-----------|--------|-----------|------------|------------|------|------------|-----------|--------------------------|---------|
| 09/08/2022. 1:55pm   | EPL1        | Wallace Creek Bridge | 15.8      | 133.5  | 13.17     | 1170       | 746        | 7.62 | 231        | 0.0       |                          |         |
| 09/08/2022. 2:08pm   | EPL2        | Wallace Creek Bridge | 15.3      | 123.2  | 12.32     | 430        | 280        | 6.86 | 71.0       | 21.7      |                          |         |
| 29/088/2022, 08:55am | EPL4        | Portal Access        | 12.4      | 115.6  | 12.29     | 1,560      | 998        | 7.49 | 142        | 0.0       |                          |         |
| 10/8/2022, 9:41 am   | EPL25       | Portal Access        | 11.7      | 113.8  | 12.33     | 443        | 288        | 6.59 | 92         | 94.6      |                          |         |

**Notes:**

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.

September 2022 EPL 21266 In Situ Water Quality Measurements  
EPL Monthly Monitoring September 2022

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                                                                                                                                  |
|---------------------|-------------|----------------------------------------------------------------------------------------------|-----------|--------|-----------|------------|------------|------|------------|-----------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 5/9/2022, 2:05 pm   | EPL5        | Yarrangobilly River, upstream of the exploratory tunnel and construction pad                 | 10.65     | 118.4  | 13.6      | 65         | 642        | 7.59 | 152        | 1.5             | Medium Flow, clear water                                                                          | This location is upstream of works and is therefore representative of background conditions.                                             |
| 5/9/2022, 2:49 pm   | EPL6        | Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence                | 10.78     | 105.4  | 13.58     | 83         | 83         | 8.03 | 170        | 1.4             | Clear water, low flow                                                                             | The source of the slightly elevated pH is unknown but will be monitored.                                                                 |
| 5/9/2022, 3:29 pm   | EPL8        | Yarrangobilly River, downstream of Lick Hole Gully                                           | 10.58     | 125.6  | 13.98     | 68         | 44         | 7.86 | 155        | 0.9             | Medium flow, clear water                                                                          | DO is elevated but representative of background conditions in September 2022 and is consistent with previous results at this location.   |
| 6/9/2022, 9:26 am   | EPL9        | Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir | 6.98      | 120.9  | 14.69     | 75         | 49         | 7.73 | -37        | 1.1             | Clear water, medium flow                                                                          | DO is elevated but representative of background conditions in September 2022 and is consistent with previous results at this location.   |
| 5/9/2022, 2:30 pm   | EPL12       | Yarrangobilly River, immediately downstream of portal pad                                    | 10.58     | 125.6  | 13.98     | 67         | 44         | 7.86 | 155        | 0.9             | Low flow, clear water                                                                             | DO is elevated but representative of background conditions in September 2022 and is consistent with previous results at this location.   |
| 5/9/2022, 4:38 pm   | EPL14       | Yarrangobilly River, downstream of road construction areas                                   | 10.17     | 127.7  | 14.35     | 78         | 51         | 7.90 | 210        | 1.1             | Low flow, clear water, no rain last 24 hrs                                                        | DO is elevated but representative of background conditions in September 2022 and is consistent with previous results at this location.   |
| 5/9/2022, 3:52 pm   | EPL15       | Yarrangobilly River, downstream of road construction areas                                   | 10.58     | 118.8  | 13.22     | 70         | 45         | 7.92 | 189        | 0.8             | Clear water, low flow, no rain last 24 hours                                                      | DO is elevated but representative of background conditions in September 2022 and is consistent with previous results at this location.   |
| 6/9/2022, 9:10 am   | EPL16       | Yarrangobilly River, downstream of road construction areas                                   | 6.98      | 120.9  | 14.69     | 75         | 49         | 7.73 | 155        | 1.1             | Clear water, medium flow, no rain last 48 hrs, QA taken here                                      | DO is elevated but representative of background conditions in September 2022 and is consistent with previous results at this location.   |
| 6/9/2022, 8:43 am   | EPL24       | Yarrangobilly River tributary (Watercourse 2), directly downstream of road                   | 8.24      | 129.6  | 15.26     | 62         | 40         | 7.60 | 96         | 3.9             | Clear water, low flow                                                                             | DO is elevated but representative of background conditions in September 2022 and is consistent with previous results at this location.   |
| 10/9/2022, 4:28 pm  | EPL26       | Eucumbene River downstream of Marica Road                                                    | 8.3       | 83.3   | 9.8       | 17.7       | 16.9       | 7.32 | 65.5       | 5.25            | -                                                                                                 | DO is low but representative of background conditions in September 2022 and is consistent with previous results at this location.        |
| 10/9/2022, 4:14 pm  | EPL27       | Eucumbene River upstream of Marica Road                                                      | 8.3       | 81.4   | 9.6       | 19.3       | 18.4       | 7.75 | 55.4       | 6.06            | QA taken here                                                                                     | This location is upstream of works and is therefore representative of background conditions.                                             |
| 10/9/2022, 1:36 pm  | EPL30       | Kellys Plain Creek, downstream of accommodation camp and laydown areas                       | 9.4       | 75.1   | 8.6       | 14.2       | 13         | 6.47 | 239.9      | 12.3            | Light breeze, clear water, steady flow, scattered showers                                         | pH and DO are low however are representative of background conditions in September 2022 near Tantangara Reservoir.                       |
| 10/9/2022, 1:22 pm  | EPL31       | Kellys Plain Creek, upstream of accommodation camp and laydown areas                         | 9.5       | 78.6   | 9.0       | 13.5       | 12.35      | 6.47 | 245.7      | 8.17            | -                                                                                                 | pH and DO are low however are representative of background conditions in September 2022 near Tantangara Reservoir.                       |
| 10/9/2022, 12:56 pm | EPL33       | Murrumbidgee River, downstream of Tantangara reservoir outlet                                | 7.9       | 73.6   | 8.7       | 10.1       | 9.75       | 6.99 | 250.3      | 3.88            | Strong flow, heaps of water discharging from reservoir, overcast, fresh breeze, scattered showers | DO is low but representative of background conditions in September 2022 and is consistent with previous results in Tantangara Reservoir. |
| 10/9/2022, 12:23 pm | EPL34       | Nungar Creek, upstream of Tantangara Road                                                    | 8.1       | 78.7   | 9.3       | 9.1        | 8.45       | 6.41 | 233.5      | 4.29            | Strong flow, scattered showers, overcast, light breeze                                            | This location is upstream of works and is therefore representative of background conditions.                                             |
| 10/9/2022, 12:11 pm | EPL35       | Nungar Creek, downstream of Tantangara Road                                                  | 8         | 73.5   | 8.7       | 8.2        | 7.8        | 6.46 | 241.6      | 5.22            | Strong flow, overcast, scattered showers, light breeze                                            | pH and DO are low however are representative of background conditions in September 2022.                                                 |
| 11/9/2022, 9:04 am  | EPL36       | Camerons Creek, upstream of works in Rock Forest                                             | 9.4       | 82.6   | 9.5       | 25.2       | 23.4       | 6.74 | 195.0      | 3.83            | Steady flow, scattered showers, overcast light breeze                                             | This location is upstream of works and is therefore representative of background conditions.                                             |
| 11/9/2022, 9:06 am  | EPL37       | Camerons Creek, downstream of works in Rock Forest                                           | 9.5       | 89.7   | 10.3      | 22.0       | 20.15      | 6.44 | 215.3      | 5.65            | QA-ROK done here<br>Steady flow, scattered showers, light breeze                                  | pH and DO are low however are generally representative of background conditions in September 2022.                                       |

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                                                                                                                                                 |
|---------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|-----------|------------|------------|-----|------------|-----------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 23/9/2022, 12:15 pm | EPL10       | Talbingo Reservoir, downstream of road works and upstream of water intake point                                                                                      | 12.31     | 79.4   | 8.5       | 53         | 34         | 7.6 | 194        | 0               | -                                                                    | DO is low but is consistent with previous results for Talbingo Reservoir. The turbidity reading appears erroneous at this location.                     |
| 23/9/2022, 12:02 pm | EPL11       | Talbingo Reservoir, downstream of outlet                                                                                                                             | 12.57     | 90.6   | 9.63      | 72         | 47         | 7.9 | 178        | 2.2             | -                                                                    | -                                                                                                                                                       |
| 11/9/2022, 10:51 am | EPL28       | Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River                                                                                                | 7.8       | 84.6   | 10.1      | 11.7       | 11.05      | 6.1 | 300.3      | 4.2             | Sampled following rainfall. Sunny, moderate breeze.                  | This location is upstream of works and is therefore representative of background conditions.                                                            |
| 11/9/2022, 11:34 am | EPL29       | Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River                                                                              | 7.8       | 82     | 9.8       | 10.4       | 9.75       | 6.4 | 271.0      | 3.4             | Sampled following rainfall. Fine, moderate wind.                     | pH and DO are low however are representative of background conditions in September 2022 and consistent with previous results from Tantangara Reservoir. |
| 11/9/2022, 11:19 am | EPL32       | Tantangara Reservoir, Tantangara Intake. Downstream of construction works                                                                                            | 7.8       | 91.3   | 10.9      | 10.2       | 9.75       | 6.1 | 279.5      | 3.0             | Sampled following rainfall. Sunny, moderate wind. QA taken at EPL32. | pH is low however are representative of background conditions in September 2022 and consistent with previous results from Tantangara Reservoir.         |
| 11/9/2022, 11:07 am | EPL38       | Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities | 7.7       | 83.9   | 10.0      | 11.5       | 11.05      | 7.0 | 282.5      | 3.2             | Sampled following rainfall. Sunny, moderate wind.                    | DO is low but representative of background conditions in September 2022 and is consistent with previous results in Tantangara Reservoir.                |
| 11/9/2022, 9:58 am  | EPL39       | Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works             | 7.2       | 90.6   | 10.9      | 9.6        | 9.75       | 6.1 | 192.6      | 9.0             | Shallow water. Sampled after recent rainfall.                        | This location is upstream of works and is therefore representative of background conditions.                                                            |
| 11/9/2022, 10:28 am | EPL40       | Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works                     | 7.2       | 86.6   | 10.5      | 10.9       | 10.4       | 6.0 | 278.6      | 4.3             | Shallow water, sampled following rainfall. Sunny, moderate wind.     | This location is upstream of works and is therefore representative of background conditions.                                                            |
| 11/9/2022, 11:45 am | EPL 51      | Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet                                                                                              | 7.7       | 85.1   | 10.2      | 10.3       | 9.75       | 6.3 | 265.5      | 3.3             | Sampled following rainfall. Sunny, moderate wind.                    | pH and DO are low however are representative of background conditions in September 2022 and consistent with previous results from Tantangara Reservoir. |

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                                                                               |
|--------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|-----------|------------|------------|------|------------|-----------------|----------------|---------------------------------------------------------------------------------------|
| 24/9/2022, 8:20 am | EPL41       | Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir. | 13.85     | 24.5   | 2.52      | 199        | 128        | 9.05 | 130        | 21.60           | -              | Treated water was not being discharged to Talbingo Reservoir 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                                                                                 |
|--------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|-----------|------------|------------|-----|------------|-----------------|----------------|-----------------------------------------------------------------------------------------|
| 11/9/2022, 7:43 am | EPL50       | Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir. | 8.3       | 72.6   | 8.5       | 6          | 5.20       | 7.2 | 172.9      | 0.3             | -              | Treated water was not being discharged to Tantangara Reservoir at the time of sampling. |

Notes:

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.

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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                                                                                                                                                                |
| 4/10/2022, 8:25 am                    | EPL5        | Yarrangobilly River, upstream of the exploratory tunnel and construction pad                 | 9.51       | 85.7       | 9.78      | 54         | 35              | 6.86 | 97         | 8               | -                                                                | This location is upstream of works and is therefore representative of background conditions.                                                                           |
| 4/10/2022, 8:51 am                    | EPL6        | Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence                | 8.9        | 91.5       | 10.6      | 77         | 50              | 7.62 | 128        | 9               | -                                                                | -                                                                                                                                                                      |
| 4/10/2022, 11:48 am                   | EPL8        | Yarrangobilly River, downstream of Lick Hole Gully                                           | 10.87      | 90.1       | 9.97      | 81         | 53              | 7.53 | 170        | 7               | -                                                                | -                                                                                                                                                                      |
| 4/10/2022, 1:21 pm                    | EPL9        | Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir | 13.07      | 62.7       | 6.59      | 66         | 0.043           | 7.75 | 134        | 7               | -                                                                | DO is low but representative of background conditions in October 2022 and is within range of historical results at this location.                                      |
| 4/10/2022, 12:59 pm                   | EPL12       | Yarrangobilly River, immediately downstream of portal pad                                    | 10.99      | 92.7       | 10.23     | 59         | 39              | 7.53 | 71         | 6               | -                                                                | -                                                                                                                                                                      |
| 4/10/2022, 9:45 am                    | EPL14       | Yarrangobilly River, downstream of road construction areas                                   | 9.49       | 87.6       | 10.01     | 80         | 52              | 7.58 | 153        | 6               | -                                                                | DO is low but representative of background conditions in October 2022 and is within range of historical results at this location.                                      |
| 4/10/2022, 11:25 am                   | EPL15       | Yarrangobilly River, downstream of road construction areas                                   | 10.42      | 92.6       | 10.35     | 66         | 43              | 7.60 | 160        | 7.5             | -                                                                | -                                                                                                                                                                      |
| 4/10/2022, 12:13 pm                   | EPL16       | Yarrangobilly River, downstream of road construction areas                                   | 10.98      | 87.1       | 9.6       | 66         | 43              | 7.50 | 176        | 6               | -                                                                | DO is low but representative of background conditions in October 2022 and is within range of historical results at this location.                                      |
| 4/10/2022, 1:48 pm                    | EPL24       | Yarrangobilly River tributary (Watercourse 2), directly downstream of road                   | 16.62      | 64.9       | 6.32      | 57         | 37              | 7.34 | 127        | 6               | -                                                                | DO is low but representative of background conditions in October 2022 and is within range of historical results at this location.                                      |
| -                                     | EPL26       | Eucumbene River downstream of Marica Road                                                    | -          | -          | -         | -          | -               | -    | -          | -               | Results not available due to water monitor malfunction.          | Results not available due to laboratory issues.                                                                                                                        |
| -                                     | EPL27       | Eucumbene River upstream of Marica Road                                                      | -          | -          | -         | -          | -               | -    | -          | -               | Results not available due to water monitor malfunction.          | Results not available due to laboratory issues.                                                                                                                        |
| 1/10/2022, 1:25 pm                    | EPL30       | Kellys Plain Creek, downstream of accommodation camp and laydown areas                       | 10.2       | 83.8       | 9.4       | 12.5       | 11.7            | 6.38 | 218.1      | 5.5             | Partly cloudy, strong flow, light breeze.                        | pH and DO are low however are representative of background conditions in October 2022 and consistent with previous results near Tantangara Reservoir.                  |
| 1/10/2022, 1:10 pm                    | EPL31       | Kellys Plain Creek, upstream of accommodation camp and laydown areas                         | 9.9        | 90.6       | 10.3      | 10.7       | 9.75            | 6.03 | 245.3      | 4.16            | Light breeze, strong flow, partly cloudy.                        | pH is low however is representative of background conditions in October 2022 and consistent with previous results near Tantangara Reservoir.                           |
| 1/10/2022, 12:40 pm                   | EPL33       | Murrumbidgee River, downstream of Tantangara reservoir outlet                                | 9.1        | 89.5       | 10.3      | 10.8       | 9.75            | 5.94 | 248.5      | 3.7             | Partly cloudy, clear water, strong flow.                         | pH and DO are low however are representative of background conditions in October 2022 and consistent with previous results near Tantangara Reservoir.                  |
| 1/10/2022, 12:03 pm                   | EPL34       | Nungar Creek, upstream of Tantangara Road                                                    | 8.6        | 85.7       | 10.0      | 7.9        | 7.15            | 5.94 | 227.8      | 3.56            | Partly cloudy, strong flow, clear water.                         | This location is upstream of works and is therefore representative of background conditions.                                                                           |
| 1/10/2022, 11:52 am                   | EPL35       | Nungar Creek, downstream of Tantangara Road                                                  | 8.5        | 92.5       | 10.8      | 7.9        | 7.8             | 5.94 | 229.2      | 3.76            | Partly cloudy, strong flow, clear water, light wind.             | pH is low however is representative of background conditions in October 2022 and consistent with previous results near Tantangara Reservoir and at Nungar Creek.       |
| 1/10/2022, 10:51 am                   | EPL36       | Camerons Creek, upstream of works in Rock Forest                                             | 9.5        | 106.4      | 12.1      | 22.5       | 20.8            | 8.24 | 88.8       | 4.56            | Light breeze, overcast, clear water, light flow.                 | This location is upstream of works and is therefore representative of background conditions.                                                                           |
| 1/10/2022, 11:11 am                   | EPL37       | Camerons Creek, downstream of works in Rock Forest                                           | 10.2       | 89.8       | 10.1      | 20.6       | 18.2            | 6.37 | 214.2      | 5.24            | QA-ROK sampled here.<br>Partly cloudy, light breeze, light flow. | The source for the variation in DO and pH relative to the upstream sample at Rock Forest is unknown, with no visible indication of the reason. This will be monitored. |

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                                                                                                                                       |
| 30/10/2022, 2:15 pm                   | EPL10       | Talbingo Reservoir, downstream of road works and upstream of water intake point                                                                                      | 17.6       | 108.7      |           | 56.2       | 37              | 7.8 |            | 2.7             | Sunny, no wind. DO and Redox data not available due to water quality meter error. | -                                                                                                                                             |
| 30/10/2022, 2:00 pm                   | EPL11       | Talbingo Reservoir, downstream of outlet                                                                                                                             | 17.2       | 107.1      |           | 55.4       | 36              | 7.8 |            | 2.76            | Sunny, no wind. DO and Redox data not available due to water quality meter error. | -                                                                                                                                             |
| 2/10/2022, 10:50 am                   | EPL28       | Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River                                                                                                | 9.5        | 110.9      | 12.7      | 11.0       | 10.4            | 6.0 | 216.4      | 3.8             | Fine weather, partly cloudy, 12km winds, clear water.                             | This location is upstream of works and is therefore representative of background conditions.                                                  |
| 2/10/2022, 12:29 pm                   | EPL29       | Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River                                                                              | 9.3        | 92.3       | 10.6      | 11.1       | 10.4            | 6.1 | 261.7      | 3.1             | -                                                                                 | This location is upstream of works and is therefore representative of background conditions.                                                  |
| 2/10/2022, 12:14 pm                   | EPL32       | Tantangara Reservoir, Tantangara Intake. Downstream of construction works                                                                                            | 9.5        | 92.7       | 10.6      | 11.1       | 10.4            | 6.3 | 253.9      | 3.2             | QA_TAN done here.                                                                 | pH is low however are representative of background conditions in October 2022 and consistent with previous results from Tantangara Reservoir. |
| 2/10/2022, 12:02 pm                   | EPL38       | Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities | 9.3        | 93.5       | 10.7      | 12.1       | 11.05           | 6.1 | 269.5      | 3.0             | -                                                                                 | pH is low however are representative of background conditions in October 2022 and consistent with previous results from Tantangara Reservoir. |
| 2/10/2022, 10:59 am                   | EPL39       | Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works             | 8.8        | 91         | 10.6      | 9.9        | 9.1             | 6.0 | 237.5      | 2.6             | -                                                                                 | pH is low however are representative of background conditions in October 2022 and consistent with previous results from Tantangara Reservoir. |
| 2/10/2022, 11:33 am                   | EPL40       | Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works                     | 8.3        | 96.5       | 11.4      | 10.7       | 10.4            | 5.9 | 227.9      | 2.6             | -                                                                                 | This location is upstream of works and is therefore representative of background conditions.                                                  |
| 2/10/2022, 12:33 pm                   | EPL 51      | Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet                                                                                              | 9.4        | 92.4       | 10.6      | 11.2       | 10.4            | 6.1 | 261.4      | 3.8             | Sampled following rainfall. Sunny, moderate wind.                                 | pH is low however are representative of background conditions in October 2022 and consistent with previous results from Tantangara Reservoir. |

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                                             |
| 30/10/2022, 4:16 pm                   | EPL41       | Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir. | 20.54      | 107.4      | 9.65      | 346        | 225             | 8.09 | 504        | 30.20           | -              | 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                                             |
| 1/10/2022, 1:42 pm                    | EPL50       | Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir. | 10.9       | 78.8       | 8.7       | 7          | 6.50            | 6.5 | 205.8      | 1.7             | -              | No discharge was occurring at the time of sampling. |

Notes:

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.

November 2022 EPL 21266 In Situ Water Quality Measurements  
EPL Monthly Monitoring November 2022

Table 1 - Surface Water Quality Data  
River and Minor Watercourses

| Table 1 - Surface Water Quality Data<br>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                                                                                                                                                              |
| 6/11/2022, 1:44 pm                                                   | EPL5        | Yarrangobilly River, upstream of the exploratory tunnel and construction pad                 | 12.15                                 | 91       | 9.77313   | 48         | 31         | 6.87      | 177        | 16.7            | -                                                                           | This location is upstream of works and is therefore representative of background conditions.                                                                         |
| 6/11/2022, 2:29 pm                                                   | EPL6        | Wallaces Creek, upstream of Yarrangobilly River and Wallaces Creek confluence                | 13.95                                 | 94.4     | 9.73      | 60         | 39         | 6.96      | -23        | 24.5            | Overcast, slightly turbid                                                   | -                                                                                                                                                                    |
| 7/11/2022, 2:14 pm                                                   | EPL8        | Yarrangobilly River, downstream of Lick Hole Gully                                           | 11.24                                 | 94       | 10.3      | 62         | 40         | 7.65      | -60        | 23.6            | Highly rapid water, water levels had risen but not flooding. Slight turbid. | -                                                                                                                                                                    |
| 7/11/2022, 7:01 am                                                   | EPL9        | Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir | 10.43                                 | 103      | 11.51     | 57         | 37         | 7.21      | 144        | 18.1            | Sunny, clear water, rapid flow,                                             | -                                                                                                                                                                    |
| 6/11/2022, 2:03 pm<br>7/11/2022, 7:51 am<br>7/11/2022, 8:04 am       | EPL12       | Yarrangobilly River, immediately downstream of portal pad                                    | 12.23                                 | 92.3     | 9.89      | 50         | 33         | 6.88      | -18        | 13.7            | Overcast, slightly turbid                                                   | -                                                                                                                                                                    |
|                                                                      | EPL14       | Yarrangobilly River, downstream of road construction areas                                   | 10.11                                 | 100      | 11.26     | 72         | 47         | 7.56      | 167        | 17.3            | Sunny, clear flowing water, high water level                                | -                                                                                                                                                                    |
|                                                                      | EPL15       | Yarrangobilly River, downstream of road construction areas                                   | 10.18                                 | 94.3     | 10.5      | 54         | 35         | 7.56      | 174        | 18.1            | Sunny, clear rapid water, high water level                                  | -                                                                                                                                                                    |
| 6/11/2022, 3:37 pm                                                   | EPL16       | Yarrangobilly River, downstream of road construction areas                                   | 13.31                                 | 94.9     | 9.93      | 54         | 35         | 7.36      | -44        | 26.2            | Cloudy, slightly turbid                                                     | Turbidity slightly exceeds the WQO, however is generally representative of the Yarrangobilly River in November 2022. No source of the turbidity could be identified. |
| 7/11/2022, 7:18 am                                                   | EPL24       | Yarrangobilly River tributary (Watercourse 2), directly downstream of road                   | 11.28                                 | 96.8     | 10.6      | 57         | 37         | 7.01      | 77         | 16.5            | Sunny, clear running water,                                                 | -                                                                                                                                                                    |
| 9/11/2022, 3:39 pm                                                   | EPL26       | Eucumbene River downstream of Marica Road                                                    | 7.2                                   | 67.3     | 8.1       | 14.5       | 14.3       | 6.01      | 207.4      | 4.73            | Fine weather, steady flow, clear QA done here                               | pH and DO are low however are representative of background conditions and are consistent with previous results.                                                      |
| 9/11/2022, 3:48 pm                                                   | EPL27       | Eucumbene River upstream of Marica Road                                                      | 7.3                                   | 68.5     | 8.3       | 14.6       | 14.3       | 6.13      | 183.3      | 10.2            | Steady flow, clear, fine weather                                            | This location is upstream of works and is therefore representative of background conditions.                                                                         |
| 13/11/2022, 11:18 am                                                 | EPL30       | Kellys Plain Creek, downstream of accommodation camp and laydown areas                       | 13.1                                  | 51.9     | 5.5       | 19.6       | 16.5       | 7.44      | -100.2     | 17.6            | Sampled following heavy rain. Creek flooded.                                | DO is low however generally representative of background conditions in November 2022. DO will be monitored further.                                                  |
| 13/11/2022, 10:59 am                                                 | EPL31       | Kellys Plain Creek, upstream of accommodation camp and laydown areas                         | 12.8                                  | 78.9     | 8.4       | 16.8       | 14.3       | 7.23      | -93.3      | 7.79            | Sampled following heavy rain.                                               | DO is low however generally representative of background conditions in November 2022. DO will be monitored further.                                                  |
| 10/11/2022, 12:06 pm                                                 | EPL33       | Murrumbidgee River, downstream of Tantangara reservoir outlet                                | 16.2                                  | 69.9     | 6.4       | 18.5       | 14.3       | 6.13      | 245.2      | 7.56            | Fine conditions.                                                            | pH and DO are low however are consistent with previous results near Tantangara Reservoir.                                                                            |
| 10/11/2022, 11:09 am                                                 | EPL34       | Nungar Creek, upstream of Tantangara Road                                                    | 12.3                                  | 80.4     | 8.6       | 10.8       | 9.1        | 6.58      | 60.7       | 2.48            | Fine conditions.                                                            | This location is upstream of works and is therefore representative of background conditions.                                                                         |
| 10/11/2022, 11:31 am                                                 | EPL35       | Nungar Creek, downstream of Tantangara Road                                                  | 13.1                                  | 72.4     | 7.6       | 11.9       | 9.75       | 6.90      | 137.2      | 2.48            | Fine conditions.                                                            | DO is low however generally representative of background conditions in November 2022 and consistent with previous results in the area.                               |
| 9/11/2022, 3:43 pm                                                   | EPL36       | Camerons Creek, upstream of works in Rock Forest                                             | 12.4                                  | 64.1     | 6.8       | 26.4       | 22.75      | 6.18      | 204.1      | 2.6             | Steady flow, fine weather                                                   | This location is upstream of works and is therefore representative of background conditions.                                                                         |
| 9/11/2022, 3:45 pm                                                   | EPL37       | Camerons Creek, downstream of works in Rock Forest                                           | 14.2                                  | 66.4     | 6.8       | 32.5       | 26.65      | 6.53      | 173.4      | 2.97            | Clear, steady flow, fine weather QA-ROK done here                           | DO is low however generally representative of background conditions in November 2022 and consistent with previous results in the area.                               |

Table 2 - Reservoir Water Quality Data  
Talbingo and Tantangara Reservoirs

| Table 2 - Reservoir Water Quality Data<br>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                                                                                      |
| 5/11/2022, 1:37 pm                                                           | EPL10       | Talbingo Reservoir, downstream of road works and upstream of water intake point                                                                                      | 15.82                                 | 99.6     | 9.87      | 42         | 28         | 7.6       | -60        | 18.9            | Calm day, full dam, little to no turbid    | -                                                                                            |
| 5/11/2022, 11:33 am                                                          | EPL11       | Talbingo Reservoir, downstream of outlet                                                                                                                             | 15.73                                 | 107.5    | 10.67     | 44         | 29         | 7.9       | -73        | 48              | Overcast, windy, clear water green tinge   | -                                                                                            |
| 12/11/2022, 1:05 pm                                                          | EPL28       | Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River                                                                                                | 15.6                                  | 93.8     | 9.3       | 16.9       | 13.4       | 7.6       | -50.0      | 7.0             | Fine, calm conditions.                     | This location is upstream of works and is therefore representative of background conditions. |
| 12/11/2022, 2:42 pm                                                          | EPL29       | Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River                                                                              | 17.6                                  | 92.9     | 8.9       | 17.9       | 13.5       | 7.5       | -62.6      | 2.3             | Fine, calm conditions.                     | This location is upstream of works and is therefore representative of background conditions. |
| 12/11/2022, 2:30 pm                                                          | EPL32       | Tantangara Reservoir, Tantangara Intake. Downstream of construction works                                                                                            | 16.5                                  | 94.9     | 9.3       | 17.4       | 13.5       | 7.5       | -82.0      | 2.0             | Fine, calm conditions.                     | -                                                                                            |
| 12/11/2022, 2:20 pm                                                          | EPL38       | Tantangara Reservoir, variable location dependant on tide and reservoir levels. Between the emplacement area and the ancillary facilities for emplacement activities | 15.7                                  | 93.5     | 9.3       | 16.9       | 13.4       | 7.6       | -116.5     | 2.0             | Fine, calm conditions. QA taken at EPL 38. | -                                                                                            |
| 12/11/2022, 1:26 pm                                                          | EPL39       | Confluence of Nungar Creek and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of Tantangara construction works             | 15.4                                  | 90.7     | 9.1       | 15.5       | 12.4       | 6.8       | -6.0       | 2.4             | Fine, calm conditions.                     | -                                                                                            |
| 12/11/2022, 1:55 pm                                                          | EPL40       | Confluence of the upper Murrumbidgee River and Tantangara Reservoir, variable location dependent on tide and reservoir levels. Upstream of works                     | 14.7                                  | 88.3     | 9.0       | 17.3       | 14         | 7.3       | -31.5      | 1.7             | Fine, calm conditions.                     | This location is upstream of works and is therefore representative of background conditions. |
| 12/11/2022, 2:48 pm                                                          | EPL 51      | Tantangara Reservoir, downstream of Tantangara STP/PWTP diffuser outlet                                                                                              | 17.3                                  | 95.2     | 9.1       | 17.8       | 13.6       | 7.3       | -85.1      | 2.0             | Fine, calm conditions.                     | -                                                                                            |

Table 3 - Treated Water Quality Data Talbingo

| 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                                             |
| 7/11/2022, 9:01 am                               | EPL41       | Lobs Hole STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir. | 15.34     | 68.8   | 6.87      | 95.8       | 0.613      | 9.55      | 161        | 1000            | Grey, highly turbid | 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                                             |
|----------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|-----------|------------|------------|-----|------------|-----------------|------------------------|-----------------------------------------------------|
| 13/11/2022, 12:19 pm | EPL50       | Tantangara STP/PWTP Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Tantangara Reservoir. | 15.4      | 42.1   | 4.2       | 9          | 7.20       | 7.4 | -126.9     | 0.0             | Turbidity under range. | No discharge was occurring at the time of sampling. |

Table 4 - Groundwater Quality Data  
Groundwater

| Water Quality Objectives (see note 4) |        |           |            |            |           |            |                 |
|---------------------------------------|--------|-----------|------------|------------|-----------|------------|-----------------|
| 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 | Field Comments / Context                                       | Context                                                            |
|---------------------|-------------|----------------------|-----------|--------|-----------|------------|------------|------|------------|-----------|----------------------------------------------------------------|--------------------------------------------------------------------|
| 11/11/2022, 4:04 pm | EPL1        | Wallace Creek Bridge | 19.58     | 19.8   | 1.81      | 965        | 617        | 7.72 | -91        | 302       | Hydrogen sulphide odour, dark grey sediment in bottom of bore. | Elevated EC is consistent with, and within range of previous data. |
| 11/11/2022, 4:29 pm | EPL2        | Wallace Creek Bridge | 21.97     | 24.5   | 2.14      | 177        | 115        | 7.79 | -67        | 621       | Hydrogen sulphide odour, brown sediment in bottom of bore.     | Elevated EC is consistent with, and within range of previous data. |
| 11/11/2022, 1:25 pm | EPL4        | Portal Access        | 17.0      | 8.9    | 0.86      | 999        | 639        | 7.52 | -96        | 278       |                                                                | Elevated EC is consistent with, and within range of previous data. |
| 11/11/2022, 2:38 pm | EPL25       | Portal Access        | 18.7      | 20     | 1.87      | 394        | 256        | 6.64 | -3         | 1000      | Grey sediment/sludge                                           | Elevated EC is consistent with, and within range of previous data. |

Notes:

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.



## APPENDIX C – LABORATORY RESULTS TABLES

### **Snowy Hydro 2.0 Main Works EPL Sampling: 03-30 June 2022**

|                                             |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Protection Licence No:</b> | 21266                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Licensee:</b>                            | Snowy Hydro Limited                                                                                                                                                                                                                                                                                                                                                     |
| <b>Licensee address:</b>                    | PO Box 332, Cooma, NSW 2630                                                                                                                                                                                                                                                                                                                                             |
| <b>Premises:</b>                            | Snowy 2.0 Pumped Hydro Power Station Talbingo and Tantangara, Kosciuszko National Park and Rock Forest, Kosciuszko NSW 2642                                                                                                                                                                                                                                             |
| <b>EPA Public Register:</b>                 | <a href="https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued">https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued</a> |

Monthly water sampling and analysis is performed as part of the Snowy 2.0 Approval Conditions, Environmental Protection Licence No 21266 - Variation 13 May 2022, and the approved Water Management Plan to ensure that works are not impacting on nearby receiving waters.

A map showing the location of each of the EPL named sampling points is provided after the results tables.

No discharge was occurring at the time the samples at EPL 41 or EPL50 were collected.

No BOD or faecal coliform samples were collected in June 2022.

Elevated nitrogen, nitrates, and phosphorus presence are likely due to the recent rain events.

Any exceeding values are likely representative of background conditions after a wet weather event of approximately 151 mm of rain between 1- 13 June 2022 at Lobs Hole, 118 mm of rain between 1 - 13 June 2022 at Tantangara, and 50 mm of rain between 1 - 7 June at Marica.

The trigger action response plans included in the water management plan have been followed for all analytes with concentrations exceeding the respective water quality values. At this time, no further action is required.

Based on water quality results from upstream of the site, and a review of site activity and weather, exceedances are not related to the site works.

The publication of this pollution monitoring data is carried out in accordance with section 66 (6) of the Protection of the Environment Operations Act 1997 (NSW).

Snowy Hydro Limited gives no warranty or representation regarding the data suitability for any particular purpose.

Snowy Hydro Limited excludes all liability to any person for loss or damage of any kind (however caused, including but not limited to by negligence) arising whether directly or indirectly from or relating in any way to the use of this data, whether in whole or in part.

**Monthly EPL Sampling: 03-30 June 2022 - Talbingo and Tantangara Reservoir**

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Field</b>                             |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8                            |
| Electrical Conductivity                  | µS/cm        | -                  | 20-30                            |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen                         | % saturation | -                  | 90-110                           |
| Turbidity                                | NTU          | -                  | 1-20                             |
| <b>Laboratory analyses</b>               |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                         |              |                    |                                  |
| Ammonia as N                             | µg/L         | 5                  | 10                               |
| Nitrite + Nitrate as N (NOx)             | µg/L         | 2                  | 10                               |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | 5                                |
| Phosphorus (Total)                       | µg/L         | 5                  | 10                               |
| <b>Inorganics</b>                        |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | 7                                |
| <b>Hydrocarbons</b>                      |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | No Water Quality Objective Value |
| <b>Metals</b>                            |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| <b>Biological</b>                        |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biochemical Oxygen Demand                | mg/L         | 2                  | 1/5^                             |

| EPL10 | EPL11 | EPL28 | EPL29 | EPL32 | EPL38 | EPL39 | EPL40 | EPL51 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 6.18  | 6.26  | 6.8   | 6.14  | 6.07  | 5.9   | 5.92  | 5.96  | -     |
| 31    | 30    | 11.4  | 14.4  | 14    | 12.3  | 9.6   | 11.7  | -     |
| 263   | 242   | 240.9 | 263.5 | 266   | 277.6 | 260.2 | 264.2 | -     |
| 9.98  | 10.02 | 5.1   | 5.1   | 4.8   | 4.3   | 4.8   | 5.1   | -     |
| 78.3  | 83.8  | 108.7 | 89.3  | 88    | 87.8  | 89.8  | 86.4  | -     |
| -     | -     | 3.49  | 4.03  | 3.52  | 4.57  | 3.09  | 2.89  | -     |
| 13    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 11.00 | 11.00 | 7.5   | 8.5   | 9.1   | 8.0   | 5.4   | 8.0   | 6.7   |
| 31.0  | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 16.0  |
| 60.0  | 80.0  | <10   | 20.0  | 20.0  | 10    | <10   | <10   | 20.0  |
| 140   | 130   | 120   | 140   | 120   | 120   | 120   | 90    | 90.0  |
| 200   | 200   | 130   | 160   | 140   | 130   | 120   | 100   | 100   |
| 7.0   | 5.0   | 3.0   | <1    | <1    | <1    | <1    | <1    | 7.0   |
| 13.0  | <5    | 12.0  | 7.0   | <5    | 39.0  | 9.0   | 17.0  | 8.0   |
| <4    | <4    | 5.00  | 4.00  | 5.00  | <4    | <4    | <4    | <4    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 28.0  | 25.0  | 27    | 22    | 25    | 25    | 17    | 15    | 92.0  |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| 4.0   | 9.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <50   | <50   | <50   | 80    | 80    | 60    | <50   | <50   | <50   |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| -     | -     | -     | -     | -     | -     | -     | -     | -     |
| -     | -     | -     | -     | -     | -     | -     | -     | -     |

<sup>a</sup> 90th percentile concentration limits / 100 percentile concentration limits

- Sample not required at this location.

**Snowy Hydro 2.0 Main Works**  
**Monthly EPL Sampling: 03-30 June 2022 - Surface Water**

| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------|--------------|--------------------|----------------------------------|
| <b>Field</b>                  |              |                    |                                  |
| pH                            | -            | -                  | 6.5-8                            |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value |
| Temperature                   | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen              | % saturation | -                  | 90-110                           |
| Turbidity                     | NTU          | -                  | 2-25                             |
| <b>Laboratory analytes</b>    |              |                    |                                  |
| TSS                           | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO3             | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>              |              |                    |                                  |
| Ammonia as N                  | µg/L         | 5                  | 13                               |
| Nitrite + Nitrate as N (NOx)  | µg/L         | 10                 | 15                               |
| Kjeldahl Nitrogen Total       | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               |
| Phosphorus (Total)            | µg/L         | 5                  | 20                               |
| <b>Inorganics</b>             |              |                    |                                  |
| Cyanide Total                 | µg/L         | 4                  | 4                                |
| <b>Hydrocarbons</b>           |              |                    |                                  |
| Oil and Grease                | mg/L         | 5                  | No Water Quality Objective Value |
| <b>Metals</b>                 |              |                    |                                  |
| Aluminium (dissolved)         | µg/L         | 5.0                | 27                               |
| Arsenic (dissolved)           | µg/L         | 1.0                | 0.8                              |
| Chromium (III+VI) (dissolved) | µg/L         | 1.0                | 0.01                             |
| Copper (dissolved)            | µg/L         | 1.0                | 1                                |
| Iron (dissolved)              | µg/L         | 50.0               | 300                              |
| Lead (dissolved)              | µg/L         | 1.0                | 1                                |
| Manganese (dissolved)         | µg/L         | 5.0                | 1,200                            |
| Nickel (dissolved)            | µg/L         | 1.0                | 8                                |
| Silver (dissolved)            | µg/L         | 5.0                | 0.02                             |
| Zinc (dissolved)              | µg/L         | 5.0                | 2.4                              |

| EPL5 | EPL6 | EPL8 | EPL9  | EPL12 | EPL14 | EPL15 | EPL16 | EPL24 | EPL26 | EPL27 | EPL30 | EPL31 | EPL33 | EPL34 | EPL35 | EPL36 | EPL37 |
|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5.99 | 6.14 | 6.96 | 7.48  | 6.03  | 6.97  | 6.96  | 6.93  | 7.1   | 6.5   | 6.5   | 7.9   | 7.2   | 7.5   | 7.2   | 7.5   | 6.3   | 6.0   |
| 52   | 50   | 62   | 61    | 55    | 74    | 54    | 56    | 74.0  | 17.3  | 17.3  | 17.2  | 14.3  | 16.3  | 8.1   | 8.2   | 21.4  | 22.3  |
| 196  | 232  | 209  | 241   | 210   | 192   | 197   | 213   | 165.0 | 230.3 | 220.2 | 185.0 | 190.0 | 182.7 | 199.8 | 189.4 | 243.4 | 247.1 |
| 7.24 | 8.48 | 7.62 | 4.69  | 6.96  | 7.69  | 7.54  | 7.63  | 10.6  | 5.5   | 5.7   | 6.4   | 5.2   | 7.3   | 2.1   | 2.1   | 5.0   | 6.1   |
| 88.5 | 87.7 | 84.8 | 109.9 | 84.4  | 85.1  | 84.6  | 85    | 82.9  | 84.5  | 83.3  | 85.2  | 91.7  | 91.1  | 90.9  | 124.0 | 88.2  | 101.4 |
| -    | 24.3 | 5.7  | 5     | -     | 6.5   | 5.6   | 6.3   | 103.0 | 3.2   | 1.1   | 12.3  | 7.0   | 2.7   | 3.0   | 3.4   | 3.7   | 8.7   |
| 21   | 32   | 29   | 6.1   | 21    | 15    | 33    | 14    | 7.6   | <5    | <5    | 10.0  | 8.5   | <5    | <5    | <5    | <5    | <5    |
| 23   | 22   | 29   | 27    | 23    | 35    | 23    | 24    | 35    | 9.3   | 10    | 6.0   | 7.2   | 9.0   | <5    | <5    | 12    | 10    |
| <5   | <5   | <5   | <5    | <5    | 7     | <5    | <5    | <5    | 10.0  | <5    | <5    | <5    | <5    | <5    | 13.0  | <5    | <5    |
| 40.0 | 20.0 | 60.0 | 60.0  | 120   | 50.0  | 50.0  | 60.0  | 90.0  | 60.0  | <10   | 20.0  | <10   | <10   | <10   | 10.0  | 40.0  | 30.0  |
| 450  | 10.0 | 390  | 210   | 100   | 580   | 460   | 430   | 380   | <10   | 40.0  | 160   | 170   | 510   | 390   | 400   | 130   | 200   |
| 460  | 80.0 | 450  | 270   | 220   | 630   | 520   | 490   | 460   | 60.0  | 40.0  | 180   | 170   | 510   | 390   | 400   | 170   | 210   |
| 8.0  | 14.0 | 9.0  | 5.0   | 8.0   | 12.0  | 10.0  | 10.0  | 15.0  | 3.0   | 3.0   | 2.0   | 5.0   | 1.0   | 1.0   | 1.0   | 4.0   | 4.0   |
| 41.0 | <5   | 11.0 | 15.0  | 16.0  | 20.0  | 28.0  | 9.0   | 37.0  | 6.0   | 19.0  | 10.0  | 7.0   | 6.0   | 8.0   | 5.0   | 18.0  | 46.0  |
| <4   | <4   | <4   | <4    | <4    | 4.0   | <4    | 7.0   | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | 4.0   |
| <5   | <5   | <5   | 14.0  | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 7.9   | <5    | <5    | <5    | 5.7   |
| 58.0 | 36.0 | 25.0 | 19.0  | 110   | 28.0  | 44.0  | 45.0  | 57.0  | 25.0  | 5.0   | 22.0  | 12.0  | 15.0  | 21.0  | 20.0  | 32.0  | 32.0  |
| <1   | <1   | <1   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1   | <1   | <1   | <1    | <1    | <1    | <1    | <1    | 1.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1   | <1   | <1   | <1    | 12.0  | <1    | <1    | 2.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| 7.0  | <50  | 50.0 | <50   | 100   | 70.0  | 60.0  | 60.0  | 70.0  | <50   | <50   | 70.0  | <50   | 120   | 60.0  | 60.0  | 160   | 160   |
| <1   | <1   | <1   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5   | <5   | <5   | <5    | <5    | <5    | <5    | <5    | 17.0  | <5    | <5    | <5    | <5    | 7.0   | <5    | <5    | <5    | <5    |
| <1   | <1   | <1   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5   | <5   | <5   | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5   | <5   | <5   | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <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.

## Snowy Hydro 2.0 Main Works

### Monthly EPL Sampling: 03-30 June 2022 - Treated Water

| Analyte                                   | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Flow Rate</b>                          |              |                    |                                  |
| Inflow <sup>#</sup>                       | ML/day       |                    |                                  |
| Outflow <sup>#</sup>                      | ML/day       |                    | 4.32 (EPL 43 / 50)               |
| <b>Field</b>                              |              |                    |                                  |
| pH                                        | pH Unit      | -                  | 6.5-8.5                          |
| Electrical Conductivity                   | µS/cm        | -                  | 700 (EPL 41) / 200 (EPL 50)      |
| Oxidation Reduction Potential             | mV           | -                  | No Water Quality Objective Value |
| Temperature                               | °C           | -                  | 15                               |
| Dissolved Oxygen                          | % saturation | -                  | No Water Quality Objective Value |
| Turbidity                                 | NTU          | -                  | <25                              |
| <b>Laboratory analyses</b>                |              |                    |                                  |
| Total suspended solids                    | mg/L         | 5                  | 5/10                             |
| Hardness as CaCO <sub>3</sub> (filtered)  | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                          |              |                    |                                  |
| Ammonia as N                              | mg/L         | 5                  | 0.2/2 <sup>^</sup>               |
| Nitrite + Nitrate as N (NO <sub>x</sub> ) | µg/L         | 2                  | No Water Quality Objective Value |
| Kjeldahl Nitrogen Total                   | mg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                          | µg/L         | 10                 | 0.35                             |
| Reactive Phosphorus                       | µg/L         | 1                  | No Water Quality Objective Value |
| Phosphorus (Total)                        | mg/L         | 5                  | 0.1/0.3 <sup>^</sup>             |
| <b>Inorganics</b>                         |              |                    |                                  |
| Cyanide Total                             | µg/L         | 4                  | No Water Quality Objective Value |
| <b>Hydrocarbons</b>                       |              |                    |                                  |
| Oil and Grease                            | mg/L         | 5                  | 2/5 <sup>^</sup>                 |
| <b>Metals</b>                             |              |                    |                                  |
| Aluminium (dissolved)                     | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                       | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)             | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                        | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                          | µg/L         | 2                  | 300                              |
| Lead (dissolved)                          | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                     | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                        | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                        | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                          | µg/L         | 1                  | 8                                |
| <b>Biological</b>                         |              |                    |                                  |
| Faecal Coliforms                          | CFU/100mL    | 1                  | 10/100 <sup>^</sup>              |
| Biological Oxygen Demand                  | mg/L         |                    | 5                                |

| EPL 41 | EPL 43 | EPL 44 | EPL 45 | EPL 46 | EPL 47 | EPL 48 | EPL 49 | EPL 50 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -      | -      | 1.00   | 0.05   | -      | 0.07   | -      | 0      | -      |
| -      | 0.070  | -      | -      | -      | -      | -      | -      | 0.10   |
| 7.63   | -      | -      | -      | -      | -      | -      | -      | 7.55   |
| 38.8   | -      | -      | -      | -      | -      | -      | -      | 342.9  |
| 223    | -      | -      | -      | -      | -      | -      | -      | 232.2  |
| 15.69  | -      | -      | -      | -      | -      | -      | -      | 4      |
| 101.1  | -      | -      | -      | -      | -      | -      | -      | 132.2  |
| 0.89   | -      | -      | -      | -      | -      | -      | -      | 1.25   |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| 6.6    | -      | -      | -      | -      | -      | -      | -      | 200    |
| <5     | -      | -      | -      | -      | -      | -      | -      | 0.85   |
| 470    | -      | -      | -      | -      | -      | -      | -      | 4900   |
| 1.7    | -      | -      | -      | -      | -      | -      | -      | 4.6    |
| 2100   | -      | -      | -      | -      | -      | -      | -      | 9500   |
| 2      | -      | -      | -      | -      | -      | -      | -      | -      |
| 0.074  | -      | -      | -      | -      | -      | -      | -      | 0.24   |
| 10     | -      | -      | -      | -      | -      | -      | -      | 6      |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| 250    | -      | -      | -      | -      | -      | -      | -      | 29     |
| <1     | -      | -      | -      | -      | -      | -      | -      | 2      |
| 73     | -      | -      | -      | -      | -      | -      | -      | 180    |
| 10     | -      | -      | -      | -      | -      | -      | -      | 1      |
| <50    | -      | -      | -      | -      | -      | -      | -      | <50    |
| <1     | -      | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| <1     | -      | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| 39     | -      | -      | -      | -      | -      | -      | -      | 22     |
| -      | -      | -      | -      | -      | -      | -      | -      | -      |
| -      | -      | -      | -      | -      | -      | -      | -      | -      |

Note: Treated water was not being discharged at Talbingo or Tantangara Reservoirs at the time of EPL sampling

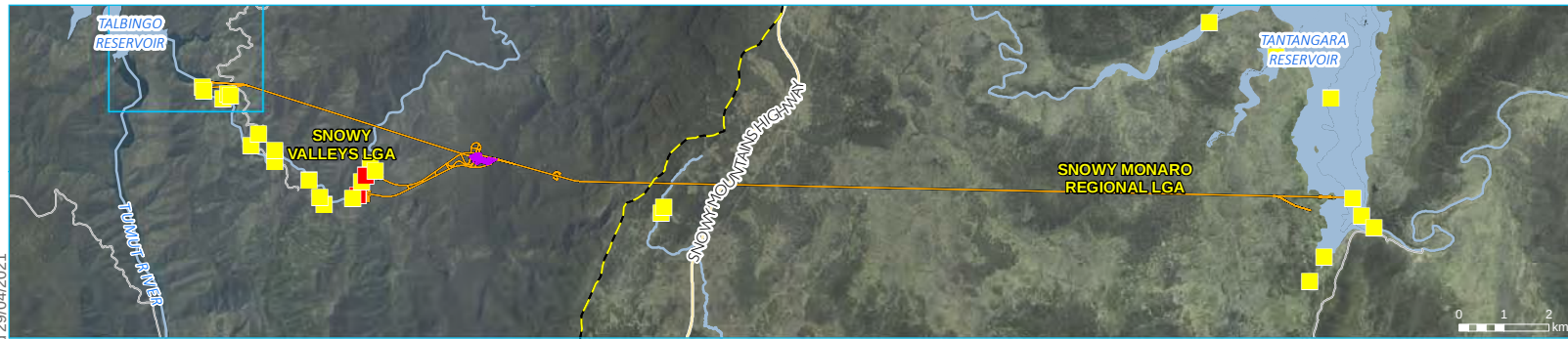
\* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

- Samples not required

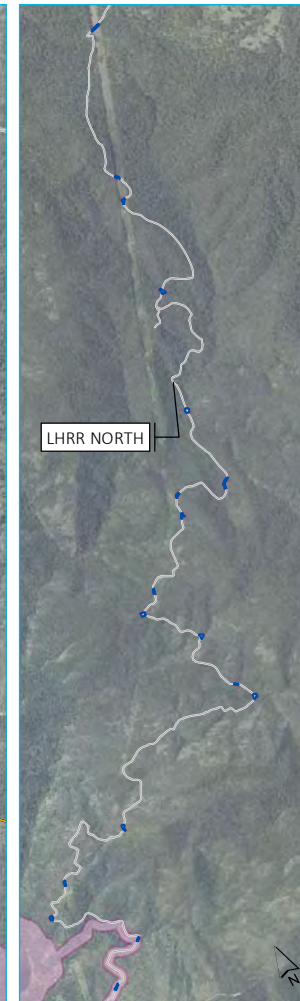
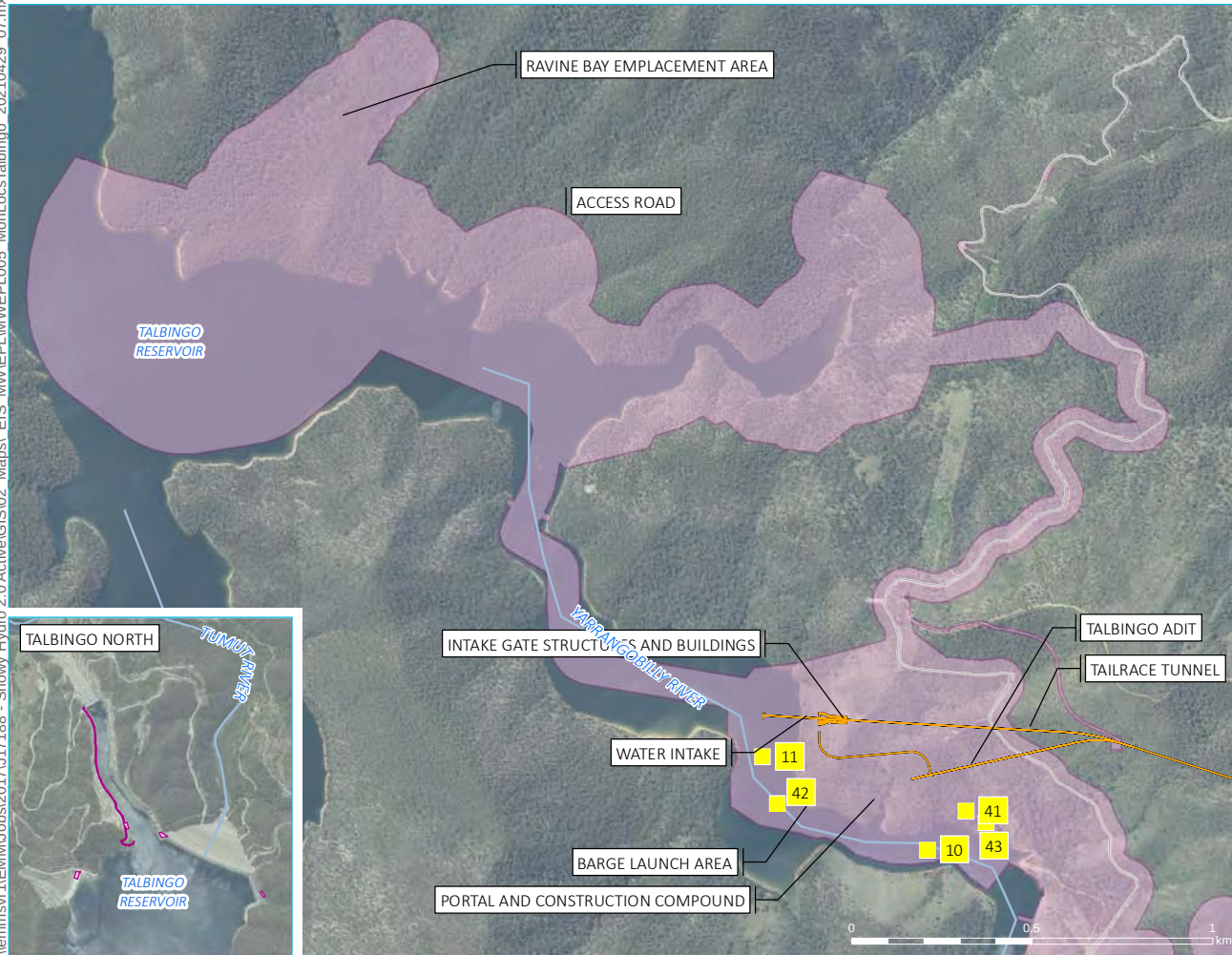
<sup>^</sup> 90 Percentile concentration limit/100 Percentile limit

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

\\emmsvr1\EMMAJ\obs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL005 MonLocsTalbingo 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Licence Premise



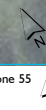
The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Talbingo Reservoir

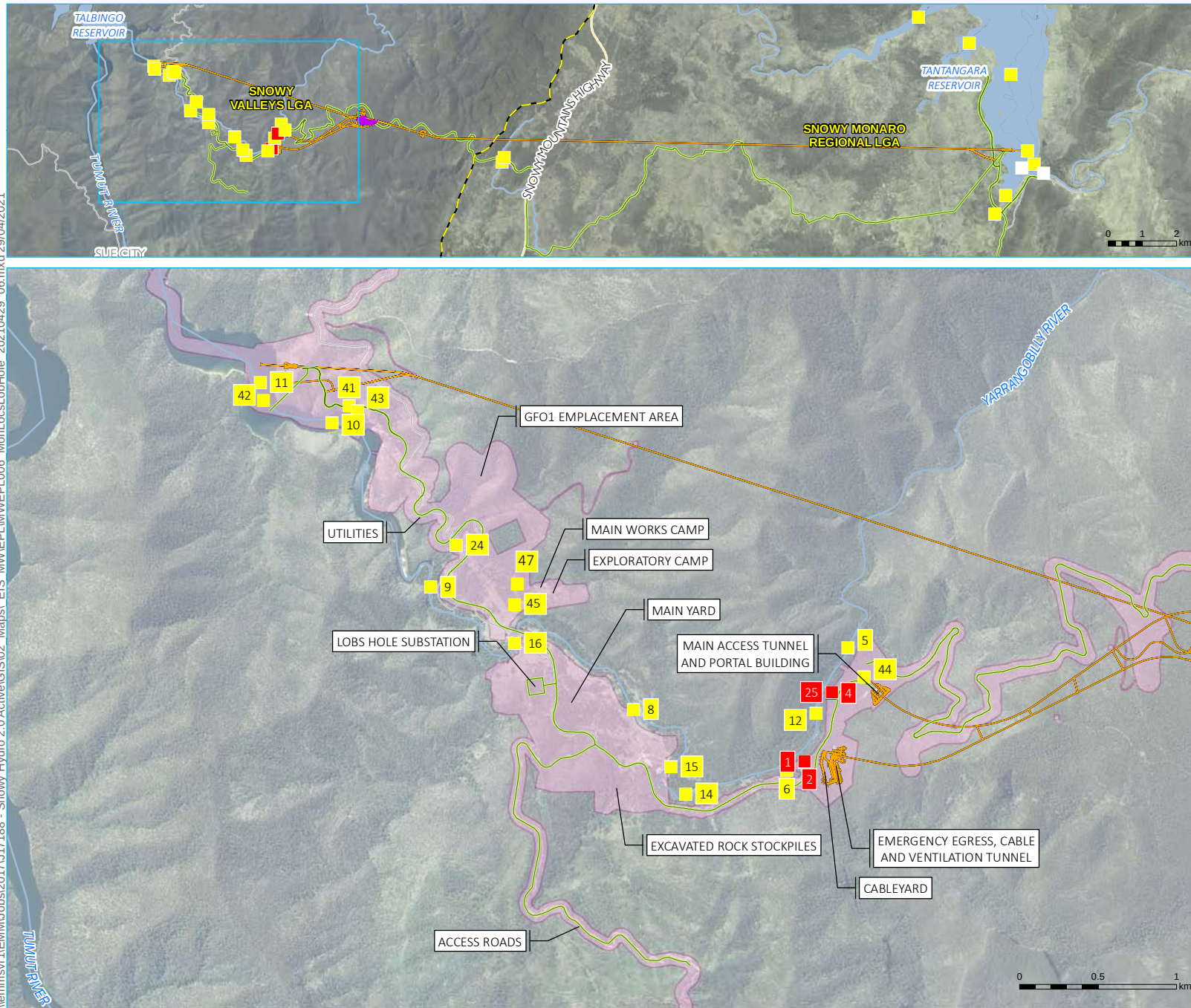
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



Snowy 2.0  
Main Works  
Figure 1

\\lemmsvr1\EMMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL006 MonLocsLobHole 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Lobs Hole

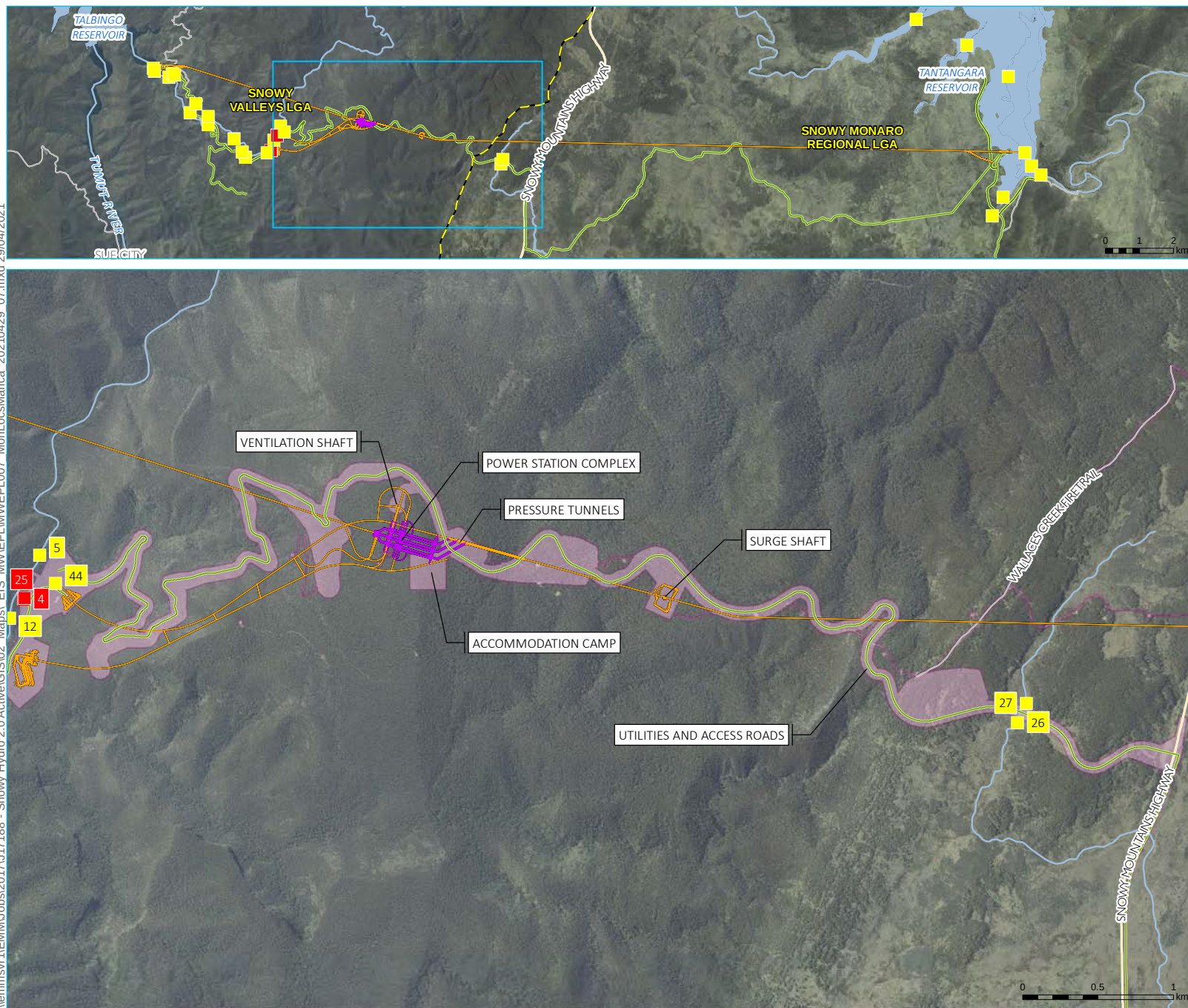
Snowy 2.0  
Main Works  
Figure 2

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL007 MonLocsMarica 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Marica

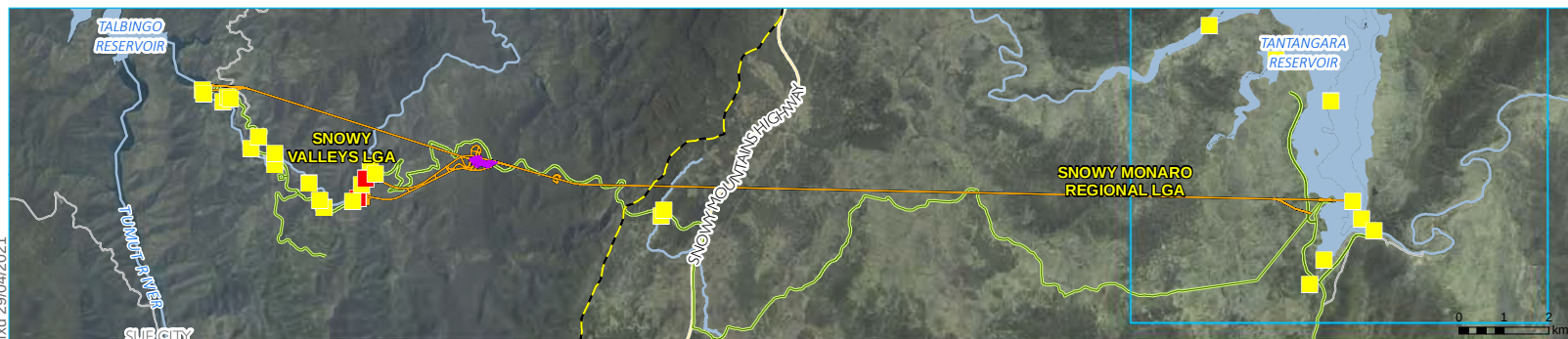
Snowy 2.0  
Main Works  
Figure 3



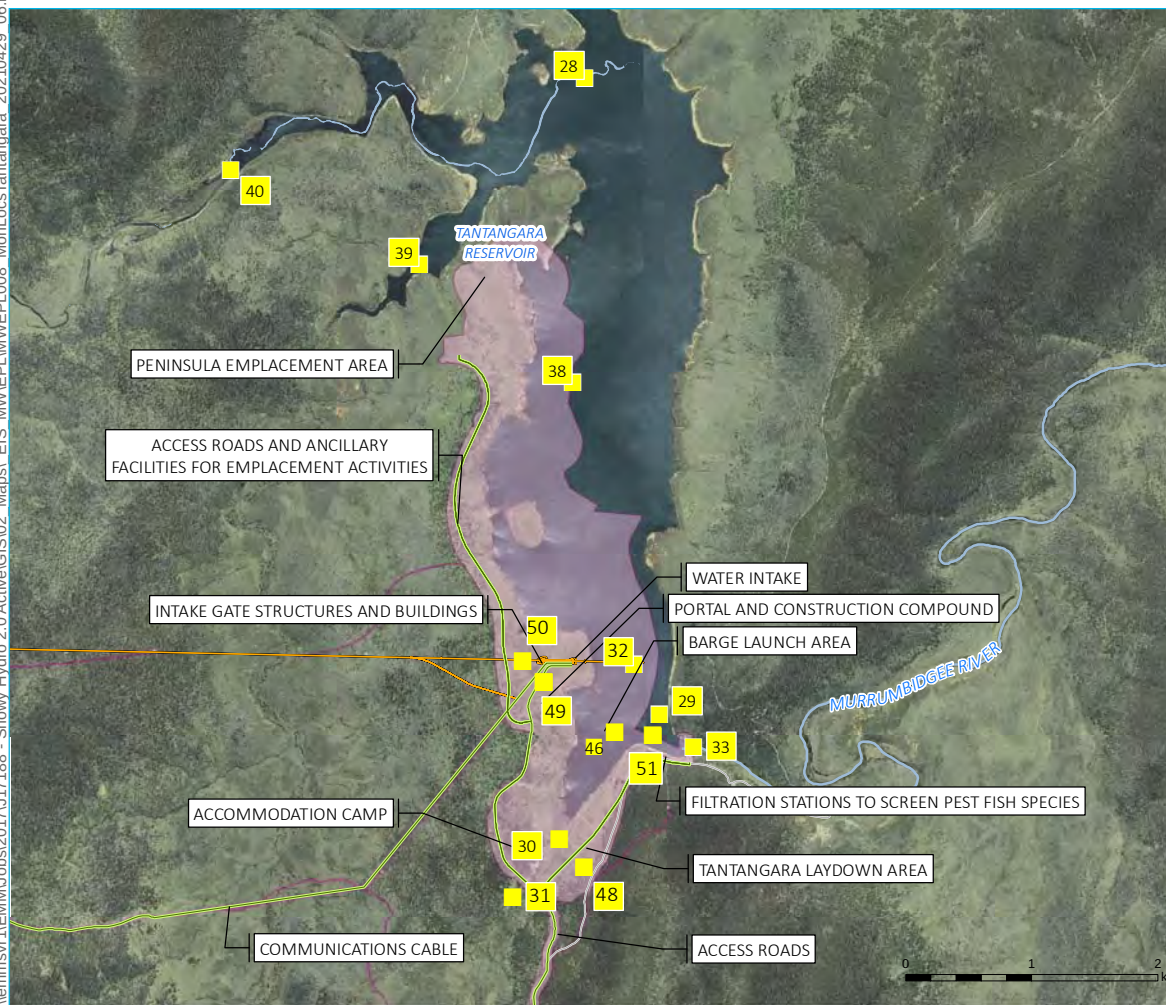
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55

\\emmsvr1\EMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL008 MonLocsTantangara 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Tantangara Reservoir

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



Snowy 2.0  
Main Works  
Figure 4

\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL009 MonLocsRockForest 20210429 06.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)



- KEY**
- EPL monitoring point
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Rock Forest

Snowy 2.0  
Main Works  
Figure 5



GDA 1994 MGA Zone 55



### **Snowy Hydro 2.0 Main Works EPL Sampling: 02 - 11 July 2022**

|                                             |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Protection Licence No:</b> | 21266                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Licensee:</b>                            | Snowy Hydro Limited                                                                                                                                                                                                                                                                                                                                                     |
| <b>Licensee address:</b>                    | PO Box 332, Cooma, NSW 2630                                                                                                                                                                                                                                                                                                                                             |
| <b>Premises:</b>                            | Snowy 2.0 Pumped Hydro Power Station Talbingo and Tantangara, Kosciuszko National Park and Rock Forest, Kosciuszko NSW 2642                                                                                                                                                                                                                                             |
| <b>EPA Public Register:</b>                 | <a href="https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued">https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued</a> |

Monthly water sampling and analysis is performed as part of the Snowy 2.0 Approval Conditions, Environmental Protection Licence No 21266 - Variation 6 July 2022, and the approved Water Management Plan to ensure that works are not impacting on nearby receiving waters.

A map showing the location of each of the EPL named sampling points is provided after the results tables.

No BOD samples and limited faecal coliform samples were collected in July 2022.

Exceedance of oil and grease at EPL 31 is upstream of the project at Kellys Plain Creek.

Exceedances at Rock Forest, Lobs Hole, Marica and Tantangara are consistent upstream and downstream of the project, with the exception of EPL 24.

The trigger action response plans included in the water management plan have been followed for all analytes with concentrations exceeding the respective water quality values. At this time, no further action is required.

Based on water quality results from upstream of the site, and a review of site activity, exceedances are not related to the site works.

The publication of this pollution monitoring data is carried out in accordance with section 66 (6) of the Protection of the Environment Operations Act 1997 (NSW).

Snowy Hydro Limited gives no warranty or representation regarding the data suitability for any particular purpose.

Snowy Hydro Limited excludes all liability to any person for loss or damage of any kind (however caused, including but not limited to by negligence) arising whether directly or indirectly from or relating in any way to the use of this data, whether in whole or in part.

## Snowy Hydro 2.0 Main Works

### Monthly EPL Sampling: 02 - 11 July 2022 - Talbingo and Tantangara Reservoir

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Field</b>                             |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8                            |
| Electrical Conductivity                  | µS/cm        | -                  | 20-30                            |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen                         | % saturation | -                  | 90-110                           |
| Turbidity                                | NTU          | -                  | 1-20                             |
| <b>Laboratory analytes</b>               |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                         |              |                    |                                  |
| Ammonia as N                             | µg/L         | 5                  | 10                               |
| Nitrite + Nitrate as N (NOx)             | µg/L         | 2                  | 10                               |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | 5                                |
| Phosphorus (Total)                       | µg/L         | 5                  | 10                               |
| <b>Inorganics</b>                        |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | 7                                |
| <b>Hydrocarbons</b>                      |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | No Water Quality Objective Value |
| <b>Metals</b>                            |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| <b>Biological</b>                        |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100 <sup>^</sup>              |
| Biochemical Oxygen Demand                | mg/L         | 2                  | 1/5 <sup>^</sup>                 |

| EPL10 | EPL11 | EPL28  | EPL29 | EPL32  | EPL38  | EPL39 | EPL40 | EPL51 |
|-------|-------|--------|-------|--------|--------|-------|-------|-------|
| 7.35  | 7.38  | 7.74   | 6.39  | 6.42   | 6.52   | 7.24  | 7.09  | 8.09  |
| 32.6  | 35.1  | 10.90  | 11.90 | 11.90  | 11.90  | 9.9   | 9.8   | 12.8  |
| 159   | 100   | 168.80 | 291   | 293.90 | 306.00 | 268.7 | 267.3 | 227.1 |
| 9.4   | 9.4   | 4.70   | 4.90  | 4.90   | 4.80   | 4.6   | 4.6   | 5     |
| 91.3  | 91.3  | 81.60  | 81.50 | 88.70  | 85.50  | 105.3 | 93    | 72.9  |
| 2     | 3     | 4.10   | 4.71  | 4.70   | 8.84   | 5.43  | 5.7   | 8.06  |
| <5    | <5    | <5     | <5    | <5     | <5     | <5    | <5    | <5    |
| 13    | 13    | 6.5    | 6.4   | 6.5    | 6.3    | 5.1   | 4.9   | 6.6   |
| <5    | <5    | 38     | <5    | <5     | <5     | <5    | 10    | <5    |
| 50    | 50    | 20     | 50    | 70     | 20     | 50    | 310   | 20    |
| 10    | 30    | 190    | 120   | 280    | 150    | 440   | 300   | 50    |
| 60    | 80    | 210    | 170   | 350    | 170    | 490   | 610   | 60    |
| 7     | 1     | 3      | 2     | 7      | 4      | 1     | 2     | 1     |
| 7     | <5    | <5     | <5    | <5     | <5     | <5    | <5    | 19    |
| <4    | <4    | <4     | <4    | <4     | <4     | <4    | <4    | 5     |
| <5    | <5    | <5     | <5    | <5     | <5     | <5    | <5    | 27    |
| <5    | 6     | 22     | 24    | 26     | 24     | 10    | 9     | 150   |
| <1    | <1    | <1     | <1    | <1     | <1     | <1    | <1    | <1    |
| <1    | <1    | <1     | <1    | <1     | <1     | <1    | <1    | <1    |
| <1    | <1    | <1     | <1    | <1     | <1     | <1    | <1    | <1    |
| <50   | <50   | <50    | <50   | <50    | <50    | <50   | <50   | <50   |
| <1    | <1    | <1     | <1    | <1     | <1     | <1    | <1    | <1    |
| <5    | <5    | <5     | <5    | <5     | <5     | <5    | <5    | <5    |
| <1    | <1    | <1     | <1    | <1     | <1     | <1    | <1    | <1    |
| <5    | <5    | <5     | <5    | <5     | <5     | <5    | <5    | <5    |
| 26    | 1     | -      | -     | -      | -      | -     | -     | -     |
| -     | -     | -      | -     | -      | -      | -     | -     | -     |

\* 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.

<sup>^</sup> 90th percentile concentration limits / 100 percentile concentration limits

- Sample not required at this location.

**Snowy Hydro 2.0 Main Works**  
**Monthly EPL Sampling: 02 - 11 July 2022 - Surface Water**

| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------|--------------|--------------------|----------------------------------|
| <b>Field</b>                  |              |                    |                                  |
| pH                            | -            | -                  | 6.5-8                            |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value |
| Temperature                   | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen              | % saturation | -                  | 90-110                           |
| Turbidity                     | NTU          | -                  | 2-25                             |
| <b>Laboratory analytes</b>    |              |                    |                                  |
| TSS                           | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO3             | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>              |              |                    |                                  |
| Ammonia as N                  | µg/L         | 5                  | 13                               |
| Nitrite + Nitrate as N (NOx)  | µg/L         | 10                 | 15                               |
| Kjeldahl Nitrogen Total       | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               |
| Phosphorus (Total)            | µg/L         | 5                  | 20                               |
| <b>Inorganics</b>             |              |                    |                                  |
| Cyanide Total                 | µg/L         | 4                  | 4                                |
| <b>Hydrocarbons</b>           |              |                    |                                  |
| Oil and Grease                | mg/L         | 5                  | No Water Quality Objective Value |
| <b>Metals</b>                 |              |                    |                                  |
| Aluminium (dissolved)         | µg/L         | 5.0                | 27                               |
| Arsenic (dissolved)           | µg/L         | 1.0                | 0.8                              |
| Chromium (III+VI) (dissolved) | µg/L         | 1.0                | 0.01                             |
| Copper (dissolved)            | µg/L         | 1.0                | 1                                |
| Iron (dissolved)              | µg/L         | 50.0               | 300                              |
| Lead (dissolved)              | µg/L         | 1.0                | 1                                |
| Manganese (dissolved)         | µg/L         | 5.0                | 1,200                            |
| Nickel (dissolved)            | µg/L         | 1.0                | 8                                |
| Silver (dissolved)            | µg/L         | 5.0                | 0.02                             |
| Zinc (dissolved)              | µg/L         | 5.0                | 2.4                              |

| EPL5  | EPL6  | EPL8  | EPL9  | EPL12 | EPL14 | EPL15 | EPL16 | EPL24 | EPL26 | EPL27 | EPL30 | EPL31 | EPL33 | EPL34 | EPL35 | EPL36 | EPL37 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 6.9   | 6.4   | 6.94  | 6.66  | 6.69  | 6.92  | 6.68  | 6.7   | 6.6   | 6.5   | 6.4   | 7.9   | 7.2   | 7.5   | 7.2   | 7.0   | 7.3   | 7.4   |
| 62.0  | 61.0  | 69.0  | 65.0  | 64.0  | 64.0  | 62.0  | 64.0  | 72.0  | 12.9  | 13.0  | 12.7  | 13.0  | 12.1  | 7.9   | 8.8   | 17.9  | 22.5  |
| 148   | 205   | 213   | 177   | 159   | 190   | 208   | 201.0 | 123.0 | 282.9 | 279.5 | 236.8 | 238.2 | 249.6 | 263.4 | 266.6 | 261.2 | 201.7 |
| 7.08  | 7.33  | 8.03  | 8.07  | 6.87  | 7.62  | 7.62  | 8.1   | 10.0  | 6.2   | 6.1   | 5.8   | 5.8   | 5.1   | 4.0   | 3.9   | 1.8   | 2.9   |
| 104.8 | 117.5 | 104.4 | 106.6 | 108   | 108.5 | 105.1 | 104.4 | 94.9  | 80.7  | 78.3  | 82.9  | 81.8  | 78.7  | 79.8  | 116.1 | 96.8  | 102.8 |
| 0     | 6.5   | 0     | 5     | 0     | 0     | 0     | 5.0   | 33.0  | 20.4  | 6.5   | 9.0   | 10.7  | 4.4   | 7.9   | 8.1   | 13.2  | 7.3   |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 13    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 27    | 27    | 30    | 28    | 28    | 29    | 28    | 30    | 33    | 8.4   | 8.8   | 6.5   | 6.4   | 6.3   | 4.3   | 4.6   | 11    | 11    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <10   | <10   | <10   | <10   | <10   | <10   | <10   | <10   | 90    | 20    | 110   | 20    | 60    | 30    | <10   | <10   | 290   | 60    |
| <10   | 40    | 40    | 40    | 20    | <10   | <10   | <10   | 30    | 50    | 70    | 40    | 30    | 90    | 50    | 50    | 180   | 390   |
| 10    | 40.0  | 50    | 40    | 30    | 20    | 20    | <0.01 | 130   | 70.0  | 180.0 | 60    | 90    | 110   | 50    | 60    | 470   | 450   |
| 3     | 10    | 4     | 4     | 3     | 4     | 4     | 4     | 7     | 3     | <1    | 1     | 1     | <1    | <1    | 1     | 4     | 4     |
| <5    | <5    | <5    | <5    | <5    | 18    | 10    | 10    | <5    | 17    | 16    | 8     | 13    | 9     | <5    | <5    | 19    | 14    |
| <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | 5     | 4     | <4    | <4    | 4     | 4     | <4    | <4    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 70    | <5    | <5    | <5    | <5    | <5    |
| 41    | 11    | 26    | 25    | 25    | 29    | 40    | 23    | 25    | 35    | 31    | 14    | 150   | 110   | 120   | 73    | 150   | 170   |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | 5.0   | 3.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | 50    | 50    | <50   | <50   | <50   | 70    | <50   | <50   | 340   | 360   |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 47    | <5    | <5    | <5    | <5    | 5     | <5    | <5    | <5    | 9     |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 6     | <5    | <5    | <5    | <5    | <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.

## Snowy Hydro 2.0 Main Works

### Monthly EPL Sampling: 02 - 11 July 2022 - Treated Water

| Analyte                                   | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Flow Rate</b>                          |              |                    |                                  |
| Inflow <sup>#</sup>                       | ML/day       |                    |                                  |
| Outflow <sup>#</sup>                      | ML/day       |                    | 4.32 (EPL 43 / 50)               |
| <b>Field</b>                              |              |                    |                                  |
| pH                                        | pH Unit      | -                  | 6.5-8.5                          |
| Electrical Conductivity                   | µS/cm        | -                  | 700 (EPL 41) / 200 (EPL 50)      |
| Oxidation Reduction Potential             | mV           | -                  | No Water Quality Objective Value |
| Temperature                               | °C           | -                  | 15                               |
| Dissolved Oxygen                          | % saturation | -                  | No Water Quality Objective Value |
| Turbidity                                 | NTU          | -                  | <25                              |
| <b>Laboratory analyses</b>                |              |                    |                                  |
| Total suspended solids                    | mg/L         | 5                  | 5/10                             |
| Hardness as CaCO <sub>3</sub> (filtered)  | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                          |              |                    |                                  |
| Ammonia as N                              | mg/L         | 5                  | 0.2/2 <sup>^</sup>               |
| Nitrite + Nitrate as N (NO <sub>x</sub> ) | µg/L         | 2                  | No Water Quality Objective Value |
| Kjeldahl Nitrogen Total                   | mg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                          | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                       | µg/L         | 1                  | No Water Quality Objective Value |
| Phosphorus (Total)                        | mg/L         | 5                  | 0.1/0.3 <sup>^</sup>             |
| <b>Inorganics</b>                         |              |                    |                                  |
| Cyanide Total                             | µg/L         | 4                  | No Water Quality Objective Value |
| <b>Hydrocarbons</b>                       |              |                    |                                  |
| Oil and Grease                            | mg/L         | 5                  | 2/5 <sup>^</sup>                 |
| <b>Metals</b>                             |              |                    |                                  |
| Aluminium (dissolved)                     | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                       | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)             | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                        | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                          | µg/L         | 2                  | 300                              |
| Lead (dissolved)                          | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                     | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                        | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                        | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                          | µg/L         | 1                  | 8                                |
| <b>Biological</b>                         |              |                    |                                  |
| Faecal Coliforms                          | CFU/100mL    | 1                  | 10/100 <sup>^</sup>              |
| Biological Oxygen Demand                  | mg/L         |                    | 5                                |

| EPL 41 | EPL 43 | EPL 44 | EPL 45 | EPL 46 | EPL 47 | EPL 48 | EPL 49 | EPL 50 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -      | -      | 0.55   | 0.02   | -      | 0.03   | -      | 0.21   | -      |
| -      | 0.030  | -      | -      | -      | -      | -      | -      | 0.00   |
| 7.61   | -      | -      | -      | 6.41   | -      | -      | -      | 7.28   |
| 93.6   | -      | -      | -      | 11.9   | -      | -      | -      | 337.4  |
| 249    | -      | -      | -      | 297.2  | -      | -      | -      | 231    |
| 12.06  | -      | -      | -      | 4.9    | -      | -      | -      | 3.7    |
| 84.5   | -      | -      | -      | 93.3   | -      | -      | -      | 67.7   |
| 1      | -      | -      | -      | 6.14   | -      | -      | -      | 0.96   |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| 58     | -      | -      | -      | -      | -      | -      | -      | 200    |
| 0.54   | -      | -      | -      | -      | -      | -      | -      | 0.88   |
| 310    | -      | -      | -      | -      | -      | -      | -      | 20     |
| 0.01   | -      | -      | -      | -      | -      | -      | -      | 0.06   |
| 320    | -      | -      | -      | -      | -      | -      | -      | 80     |
| 21     | -      | -      | -      | -      | -      | -      | -      | 160    |
| 0.075  | -      | -      | -      | -      | -      | -      | -      | 260    |
| 22     | -      | -      | -      | -      | -      | -      | -      | 6      |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| 390    | -      | -      | -      | -      | -      | -      | -      | 29     |
| <1     | -      | -      | -      | -      | -      | -      | -      | 2      |
| 280    | -      | -      | -      | -      | -      | -      | -      | 180    |
| 76     | -      | -      | -      | -      | -      | -      | -      | 1      |
| <50    | -      | -      | -      | -      | -      | -      | -      | <50    |
| 3      | -      | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| 2      | -      | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | -      | <5     |
| 250    | -      | -      | -      | -      | -      | -      | -      | 22     |
| 19     | -      | -      | -      | -      | -      | -      | -      | -      |
| -      | -      | -      | -      | -      | -      | -      | -      | -      |

Note: Treated water was not being discharged at Talbingo or Tantangara Reservoirs at the time of EPL sampling

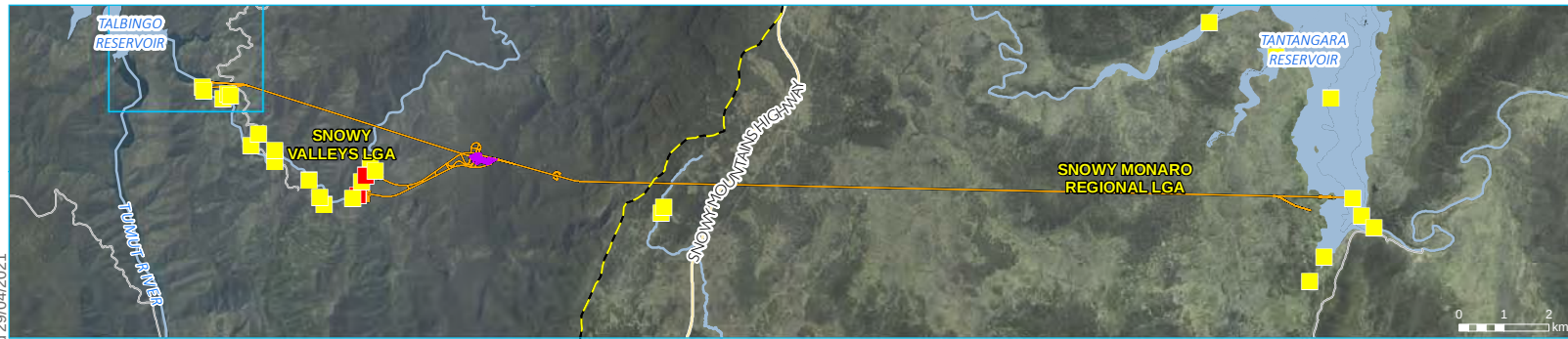
\* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

- Samples not required

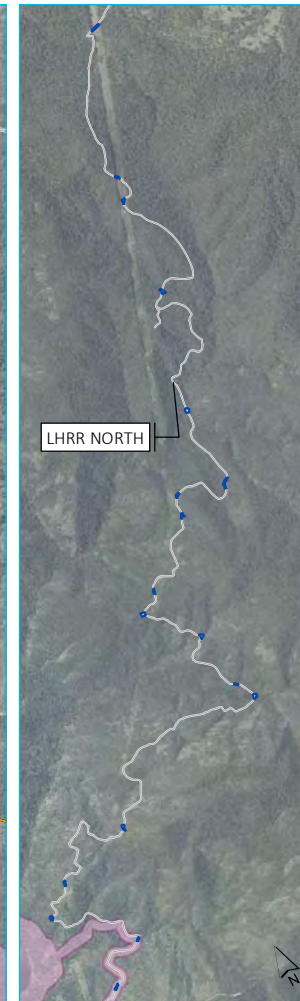
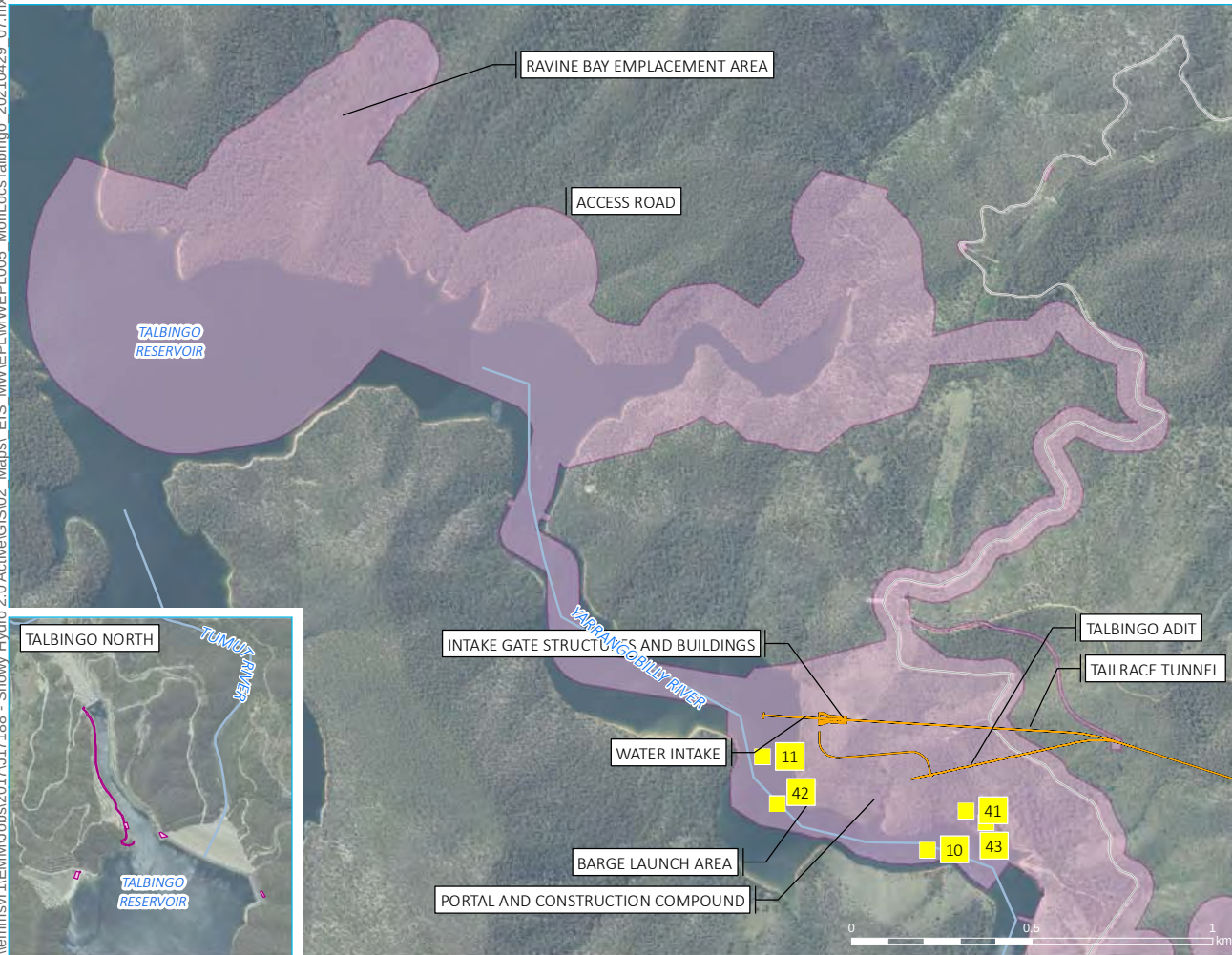
<sup>^</sup> 90 Percentile concentration limit/100 Percentile limit

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

\\emmsvr1\EMMAJ\obs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL005 MonLocsTalbingo 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
    - Groundwater
    - Surface water
  - Existing environment
    - Main road
    - Local road
    - Watercourse
    - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
    - Tunnels, portals, intakes, shafts
    - Power station
    - Licence Premise



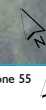
The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Talbingo Reservoir

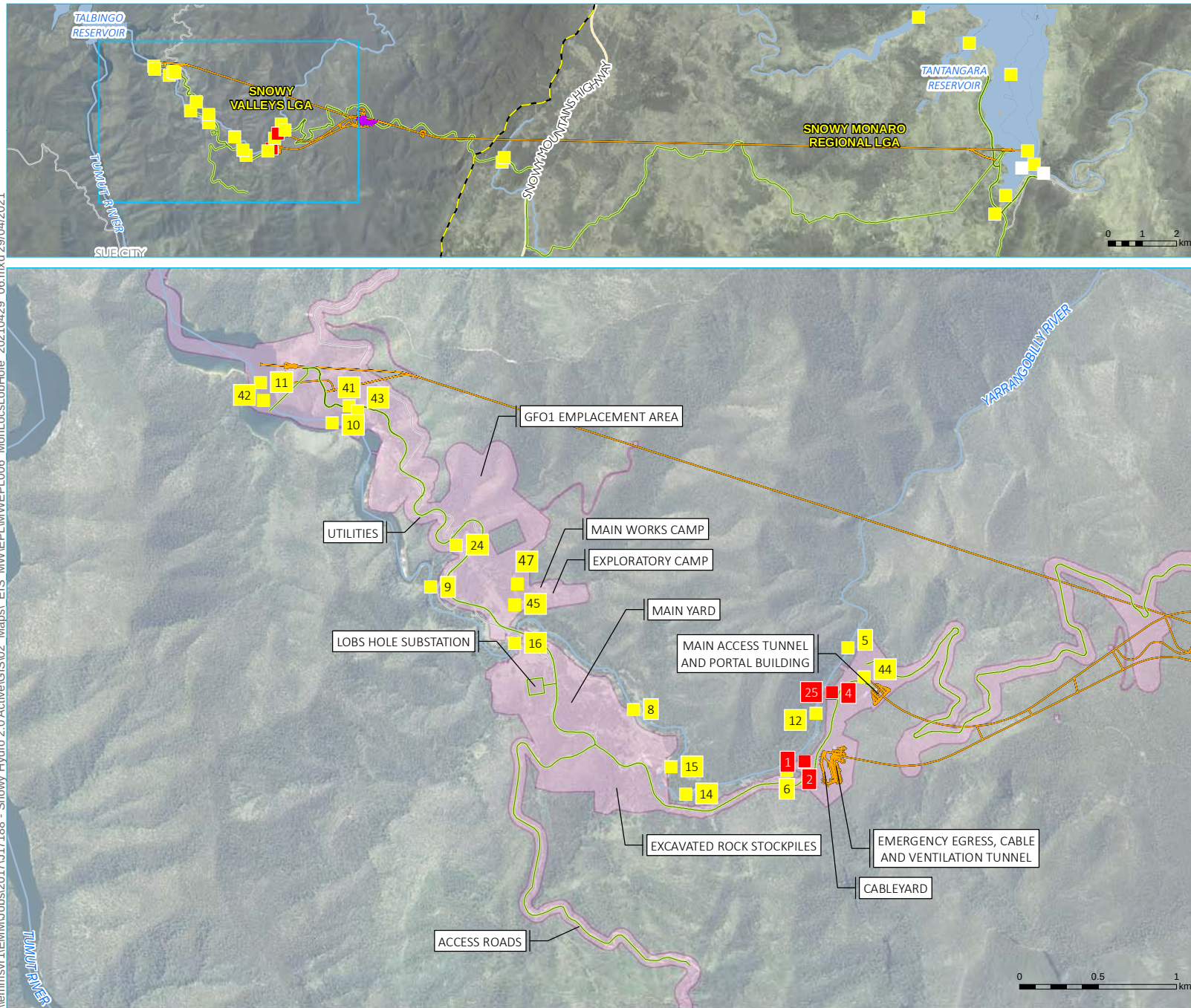
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



Snowy 2.0  
Main Works  
Figure 1

\\lemmsvr1\EMMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL006 MonLocsLobHole 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Lobs Hole

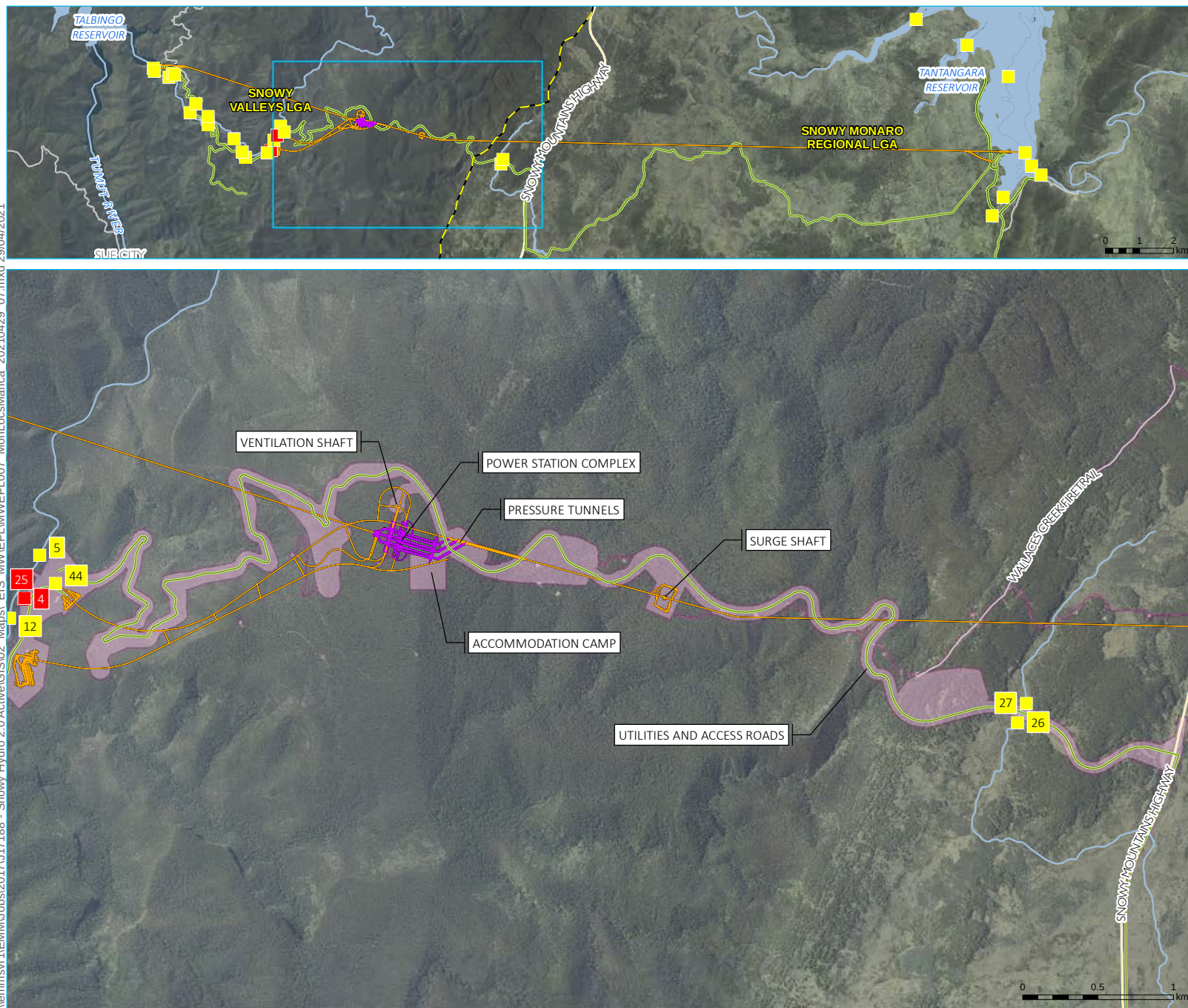
Snowy 2.0  
Main Works  
Figure 2

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL007 MonLocsMarica 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Marica

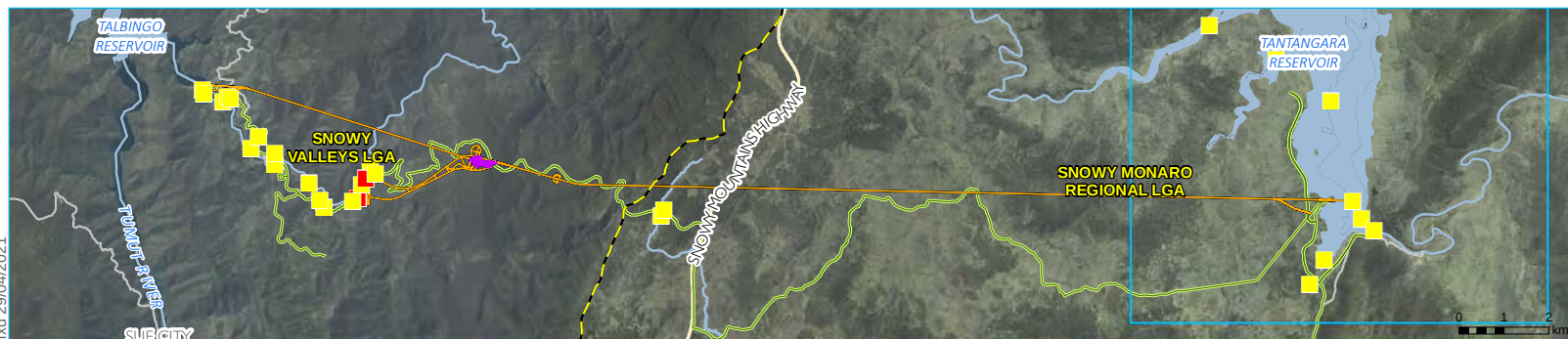
Snowy 2.0  
Main Works  
Figure 3



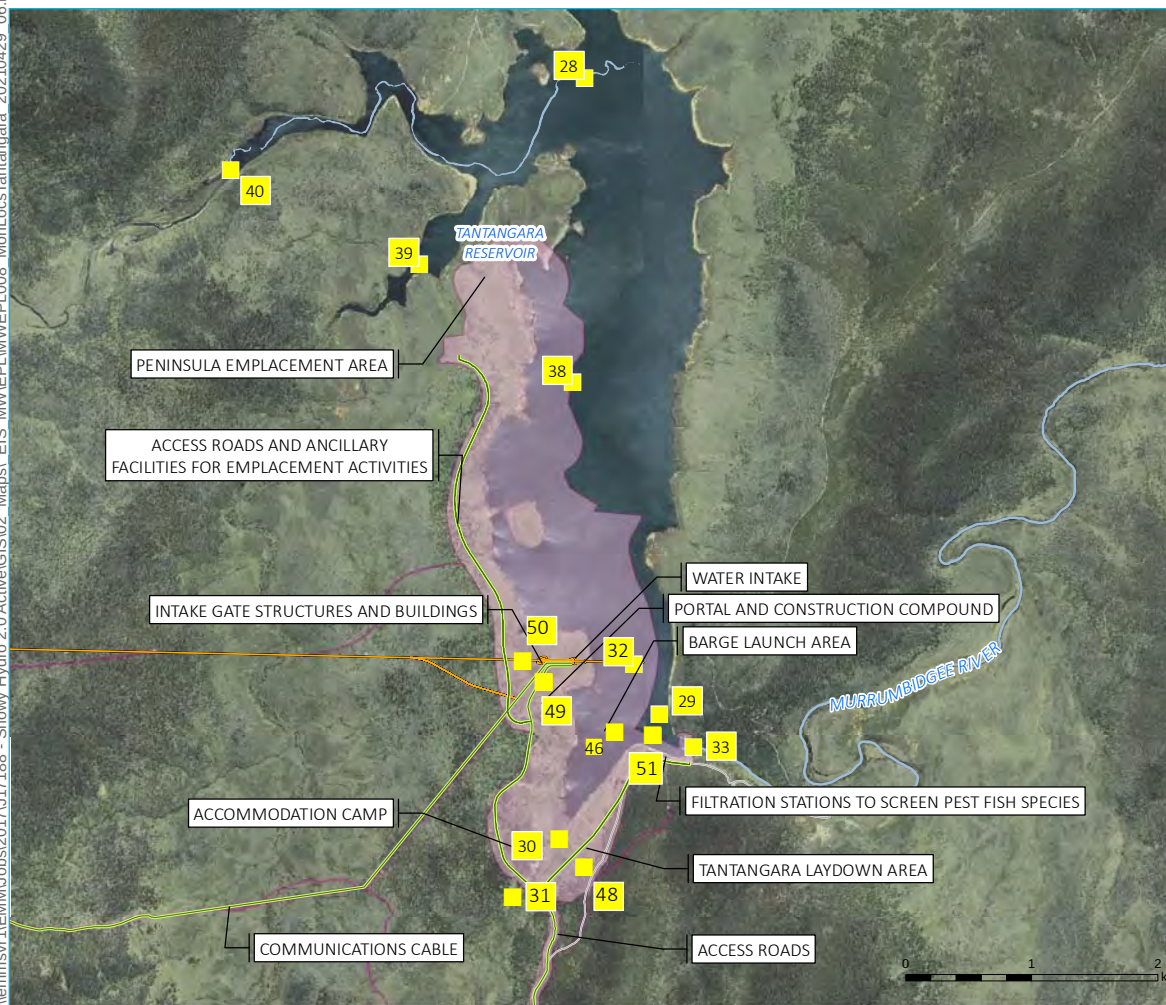
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55

\\emmsvr1\EMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL008 MonLocsTantangara 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Tantangara Reservoir

Snowy 2.0  
Main Works  
Figure 4

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL009 MonLocsRockForest 20210429 06.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)



- KEY**
- EPL monitoring point
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Rock Forest

Snowy 2.0  
Main Works  
Figure 5



GDA 1994 MGA Zone 55





### **Snowy Hydro 2.0 Main Works EPL Sampling: 05 - 21 August 2022**

|                                             |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Protection Licence No:</b> | 21266                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Licensee:</b>                            | Snowy Hydro Limited                                                                                                                                                                                                                                                                                                                                                     |
| <b>Licensee address:</b>                    | PO Box 332, Cooma, NSW 2630                                                                                                                                                                                                                                                                                                                                             |
| <b>Premises:</b>                            | Snowy 2.0 Pumped Hydro Power Station Talbingo and Tantangara, Kosciuszko National Park and Rock Forest, Kosciuzko NSW 2642                                                                                                                                                                                                                                              |
| <b>EPA Public Register:</b>                 | <a href="https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued">https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued</a> |

Monthly water sampling and analysis is performed as part of the Snowy 2.0 Approval Conditions, Environmental Protection Licence No 21266 - Variation 6 July 2022, and the approved Water Management Plan to ensure that works are not impacting on nearby receiving waters.

A map showing the location of each of the EPL named sampling points is provided after the results tables.

Sampling in August was undertaken during significant rainfall events leading to high water flows and levels, and ground saturation.

No discharge was occurring at the time of sampling at the discharge locations.

Exceedances at Rock Forest, Lobs Hole, Marica and Tantangara are generally consistent upstream and downstream of the project for surface water results.

Groundwater exceedances are generally consistent with background levels and previous groundwater monitoring results.

The trigger action response plans included in the water management plan have been followed for all analytes with concentrations exceeding the respective water quality values. At this time, no further action is required.

Based on water quality results from upstream of the site, and a review of site activity, exceedances are not related to the site works.

The publication of this pollution monitoring data is carried out in accordance with section 66 (6) of the Protection of the Environment Operations Act 1997 (NSW).

Snowy Hydro Limited gives no warranty or representation regarding the data suitability for any particular purpose.

Snowy Hydro Limited excludes all liability to any person for loss or damage of any kind (however caused, including but not limited to by negligence) arising whether directly or indirectly from or relating in any way to the use of this data, whether in whole or in part.

## Snowy Hydro 2.0 Main Works

### Monthly EPL Sampling: 05 - 21 August 2022 - Talbingo and Tantangara Reservoir

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Field</b>                             |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8                            |
| Electrical Conductivity                  | µS/cm        | -                  | 20-30                            |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen                         | % saturation | -                  | 90-110                           |
| Turbidity                                | NTU          | -                  | 1-20                             |
| <b>Laboratory analytes</b>               |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                         |              |                    |                                  |
| Ammonia as N                             | µg/L         | 5                  | 10                               |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | 5                                |
| Phosphorus (Total)                       | µg/L         | 5                  | 10                               |
| <b>Inorganics</b>                        |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | 7                                |
| <b>Hydrocarbons</b>                      |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 5                                |
| <b>Metals</b>                            |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| <b>Biological</b>                        |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biochemical Oxygen Demand                | mg/L         | 2                  | 1/5^                             |

\* 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.

| EPL10 | EPL11 | EPL28 | EPL29 | EPL32 | EPL38 | EPL39 | EPL40 | EPL51 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 7.69  | 7.64  | 5.93  | 5.75  | 5.68  | 5.88  | 6.71  | 6.14  | 5.87  |
| 51.9  | 51.2  | 10.4  | 9.4   | 10.4  | 10.2  | 9.1   | 10.7  | 9.5   |
| -     | -     | 280.9 | 279.4 | 284   | 283.2 | 229.7 | 264.3 | 221.4 |
| 10.8  | 10.4  | 6.6   | 6.4   | 6.3   | 6.3   | 6.1   | 6.2   | 6.4   |
| 105.1 | 101   | 97.3  | 93.8  | 88.5  | 85.7  | 102.5 | 90.4  | 88.9  |
| -     | -     | 3.86  | 5.64  | 6.23  | 5.61  | 3.36  | 3.71  | 6.27  |
|       |       |       |       |       |       |       |       |       |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 17.00 | 22.00 | 5.40  | 5.30  | <5    | <5    | <5    | 5.6   | 5.3   |
|       |       |       |       |       |       |       |       |       |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 100   | 630   | 100   | 130   | 150   | 110   | 50.0  | 70.0  | 130   |
| 100   | 630   | 100   | 130   | 150   | 110   | 50.0  | 70.0  | 130   |
| 10.0  | 50.0  | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | 29.0  | 15.0  | 28.0  | 24.0  | 16.0  | 19.0  | 15.0  |
|       |       |       |       |       |       |       |       |       |
| 10.0  | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    |
|       |       |       |       |       |       |       |       |       |
| <5    | <5    | <5    | <5    | 7     | <5    | 9     | <5    | 21    |
|       |       |       |       |       |       |       |       |       |
| <5    | 5.0   | 41.0  | 110   | 89.0  | 240   | 110   | 25.0  | 93.0  |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | 2.0   | <1    | <1    | <1    | <1    |
| <1    | 3.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <50   | <50   | <50   | 70.0  | 80.0  | 120   | 70.0  | <50   | 60.0  |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| 10.0  | 5.0   | <5    | <5    | <5    | 5.0   | <5    | <5    | <5    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
|       |       |       |       |       |       |       |       |       |
| 6     | 5     | -     | -     | -     | -     | -     | -     | <1    |
| <5    | <5    | -     | -     | -     | -     | -     | -     | <5    |

## Snowy Hydro 2.0 Main Works

### Monthly EPL Sampling: 09 - 10 August 2022 Groundwater

| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------|--------------|--------------------|----------------------------------|
| <b>Physiochemical</b>         |              |                    |                                  |
| pH                            | pH Unit      | -                  | 6.5-8                            |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value |
| Temperature                   | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen              | % saturation | -                  | No Water Quality Objective Value |
| Turbidity                     | NTU          | -                  | No Water Quality Objective Value |
| <b>Nutrients</b>              |              |                    |                                  |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               |
| <b>Metals</b>                 |              |                    |                                  |
| Aluminium (dissolved)         | µg/L         | 5                  | 27                               |
| Copper (dissolved)            | µg/L         | 0.5                | 1                                |
| Iron (dissolved)              | µg/L         | 2                  | 300                              |
| Lead (dissolved)              | µg/L         | 0.1                | 1                                |
| Manganese (dissolved)         | µg/L         | 0.5                | 1,200                            |
| Nickel (dissolved)            | µg/L         | 0.5                | 8                                |
| Silver (dissolved)            | µg/L         | 0.01               | 0.02                             |
| Zinc (dissolved)              | µg/L         | 1                  | 2.4                              |

| EPL1<br>(RMSB6) | EPL2<br>(RSMB7) | EPL4<br>(RSMB9) | EPL25<br>(RSMB8) |
|-----------------|-----------------|-----------------|------------------|
|                 |                 |                 |                  |
| 7.62            | 6.86            | 7.49            | 6.59             |
| 1,170           | 430             | 1,560           | 443              |
| 231             | 71.0            | 142             | 92               |
| 15.8            | 15.3            | 12.4            | 11.7             |
| 133.5           | 123.2           | 115.6           | 113.8            |
| 0.0             | 21.7            | 0.0             | 94.6             |
|                 |                 |                 |                  |
| 300             | 1,300           | 500             | 300              |
| <50             | <50             | 290             | <50              |
|                 |                 |                 |                  |
| <5              | <5              | <5              | 6                |
| <1              | 5.0             | <1              | 12.0             |
| <50             | 1,800           | <50             | 880              |
| <1              | <1              | <1              | <1               |
| 170             | 160             | 90              | 1200             |
| 17.0            | 3.0             | 2               | 13.0             |
| <5              | <5              | <5              | <5               |
| <5              | 11.0            | <5              | 27.0             |

\* 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.

**Snowy Hydro 2.0 Main Works**  
**Monthly EPL Sampling: 05 - 21 August 2022- Surface Water**

| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------|--------------|--------------------|----------------------------------|
| Field                         |              |                    |                                  |
| pH                            | -            | -                  | 6.5-8                            |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value |
| Temperature                   | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen              | % saturation | -                  | 90-110                           |
| Turbidity                     | NTU          | -                  | 2-25                             |
| Laboratory analytes           |              |                    |                                  |
| TSS                           | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO3             | mg/L         | 1                  | No Water Quality Objective Value |
| Nutrients                     |              |                    |                                  |
| Ammonia as N                  | µg/L         | 5                  | 13                               |
| Kjeldahl Nitrogen Total       | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               |
| Phosphorus (Total)            | µg/L         | 5                  | 20                               |
| Inorganics                    |              |                    |                                  |
| Cyanide Total                 | µg/L         | 4                  | 4                                |
| Hydrocarbons                  |              |                    |                                  |
| Oil and Grease                | mg/L         | 5                  | 5                                |
| Metals                        |              |                    |                                  |
| Aluminium (dissolved)         | µg/L         | 5.0                | 27                               |
| Arsenic (dissolved)           | µg/L         | 1.0                | 0.8                              |
| Chromium (III+VI) (dissolved) | µg/L         | 1.0                | 0.01                             |
| Copper (dissolved)            | µg/L         | 1.0                | 1                                |
| Iron (dissolved)              | µg/L         | 50.0               | 300                              |
| Lead (dissolved)              | µg/L         | 1.0                | 1                                |
| Manganese (dissolved)         | µg/L         | 5.0                | 1,200                            |
| Nickel (dissolved)            | µg/L         | 1.0                | 8                                |
| Silver (dissolved)            | µg/L         | 5.0                | 0.02                             |
| Zinc (dissolved)              | µg/L         | 5.0                | 2.4                              |

| EPL5 | EPL6 | EPL8 | EPL9 | EPL12 | EPL14 | EPL15 | EPL16 | EPL24 | EPL26 | EPL27 | EPL30 | EPL31 | EPL33 | EPL34 | EPL35 | EPL36 | EPL37 |
|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 6.5  | 6.6  | 6.6  | 6.65 | 6.45  | 7.12  | 7.13  | 6.6   | 6.8   | 6.8   | 6.5   | 5.9   | 5.9   | 6.2   | 6.6   | 7.0   | 7.3   | 7.4   |
| 49.0 | 55.0 | 65.0 | 56.0 | 52.0  | 79.0  | 53.0  | 56.0  | 52.0  | 13.2  | 13.3  | 11.1  | 11.8  | 9.4   | 7.2   | 7.2   | 17.9  | 22.5  |
| 242  | 245  | 247  | 256  | 232   | 235   | 220   | 248.0 | 236.0 | 27.8  | 50.7  | 283.1 | 292.0 | 275.2 | 220.0 | 187.1 | 261.2 | 201.7 |
| 8.28 | 8.9  | 8.59 | 9.03 | 7.83  | 8.35  | 8.2   | 8.6   | 10.9  | 5.6   | 5.7   | 7.8   | 7.7   | 6.3   | 5.6   | 6.5   | 1.8   | 2.9   |
| 95.7 | 97.2 | 95.7 | 96.5 | 94.2  | 92.7  | 95.2  | 96.4  | 95.3  | 86.5  | 85.3  | 93.1  | 93.7  | 98.9  | 96.0  | 98.2  | 96.8  | 102.8 |
| 25   | 40   | 30   | 40   | 19    | 75    | 110   | 35.0  | 50.0  | 15.0  | 2.8   | 19.5  | 10.7  | 6.2   | 3.9   | 3.2   | 13.2  | 7.3   |
| 20   | 30   | 20   | 25   | 12    | 46    | 31    | 27    | 11.0  | <5    | 15.0  | 12.0  | <5    | <5    | <5    | <5    | <5    | 6.2   |
| 18   | 23   | 27   | 21   | 20    | 35    | 23    | 21    | 22.0  | 8.7   | 8.4   | <5    | 5.5   | 5.3   | <5    | <5    | 8.3   | 9.1   |
| <5   | <5   | <5   | <5   | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 110  | 60.0 | 200  | 420  | 310   | 200   | 450   | 370   | 150   | 210   | 130   | 60.0  | 70.0  | 180   | 40.0  | 60.0  | 110   | 190   |
| 120  | 210  | 210  | 540  | 350   | 270   | 550   | 590   | 190   | 220   | 140   | 60.0  | 70.0  | 180   | 40.0  | 60.0  | 110   | 190   |
| 5.0  | 4.0  | 4.0  | 4.0  | 4.0   | 5.0   | 5.0   | 4.0   | 4.0   | 2.0   | 3.0   | 6.0   | 5.0   | 4.0   | 4.0   | 3.0   | 3.0   | 4.0   |
| 38.0 | 34.0 | <5   | 6.0  | 60.0  | 13.0  | <5    | <5    | 11.0  | 23.0  | 10.0  | 7.0   | 6.0   | 51.0  | <5    | 12.0  | 19.0  | 14.0  |
| <4   | <4   | <4   | <4   | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    |
| <5   | <5   | <5   | <5   | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 6.0  | <5   | 9.0  | 12.0 | 330   | 47.0  | 100   | 12.0  | 240   | 44.0  | 26.0  | 45.0  | 34.0  | 59.0  | 23.0  | 27.0  | 130   | 22.0  |
| <1   | <1   | <1   | <1   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1   | <1   | <1   | <1   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1   | 2.0  | <1   | 2.0  | 2.0   | 3.0   | <1    | 3.0   | 4.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <50  | <50  | <50  | <50  | 370   | 60.0  | 100   | <50   | 220   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | 230   | 80.0  |
| <1   | <1   | <1   | <1   | 2.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5   | <5   | <5   | <5   | 77.0  | <5    | <5    | <5    | 7.0   | 19.0  | <5    | <5    | <5    | <5    | <5    | <5    | 6.0   | <5    |
| <1   | <1   | <1   | <1   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5   | <5   | <5   | <5   | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5   | <5   | <5   | <5   | <5    | 6.0   | <5    | <5    | 15.0  | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <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.

## Snowy Hydro 2.0 Main Works

### Monthly EPL Sampling: 05 - 21 August 2022 - Treated Water

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Flow Rate</b>                         |              |                    |                                  |
| Inflow <sup>#</sup>                      | ML/day       |                    |                                  |
| Outflow <sup>#</sup>                     | ML/day       |                    | 4.32 (EPL 43 / 50)               |
| <b>Field</b>                             |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8.5                          |
| Electrical Conductivity                  | µS/cm        | -                  | 700 (EPL 41) / 200 (EPL 50)      |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | 15                               |
| Dissolved Oxygen                         | % saturation | -                  | No Water Quality Objective Value |
| Turbidity                                | NTU          | -                  | <25                              |
| <b>Laboratory analytes</b>               |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | 5/10                             |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                         |              |                    |                                  |
| Ammonia as N                             | mg/L         | 5                  | 0.2/2 <sup>^</sup>               |
| Kjeldahl Nitrogen Total                  | mg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | No Water Quality Objective Value |
| Phosphorus (Total)                       | mg/L         | 5                  | 0.1/0.3 <sup>^</sup>             |
| <b>Inorganics</b>                        |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | No Water Quality Objective Value |
| <b>Hydrocarbons</b>                      |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 2/5 <sup>^</sup>                 |
| <b>Metals</b>                            |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| <b>Biological</b>                        |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100 <sup>^</sup>              |
| Biological Oxygen Demand                 | mg/L         |                    | 5                                |

| EPL 41 | EPL 43 | EPL 44 | EPL 45 | EPL 47 | EPL 48 | EPL 49 | EPL 50 |
|--------|--------|--------|--------|--------|--------|--------|--------|
|        |        |        |        |        |        |        |        |
| -      | -      | 1.7297 | 0.0509 | 0.1134 | 0.0585 | 0.5475 | -      |
| -      | 0.3523 | -      | -      | -      | -      | -      | 0.0036 |
|        |        |        |        |        |        |        |        |
| 9.35   | -      | -      | -      | -      | -      | -      | 6.29   |
| 657    | -      | -      | -      | -      | -      | -      | 6.6    |
| 215    | -      | -      | -      | -      | -      | -      | 277.5  |
| 18.51  | -      | -      | -      | -      | -      | -      | 10.4   |
| 113.4  | -      | -      | -      | -      | -      | -      | 61.1   |
| 1.7    | -      | -      | -      | -      | -      | -      | 0.59   |
|        |        |        |        |        |        |        |        |
| 5.8    | -      | -      | -      | -      | -      | -      | <5     |
| 7.3    | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| 0.37   | -      | -      | -      | -      | -      | -      | <0.005 |
| 0.81   | -      | -      | -      | -      | -      | -      | 5      |
| 810    | -      | -      | -      | -      | -      | -      | 5000   |
| 22     | -      | -      | -      | -      | -      | -      | 2      |
| 0.02   | -      | -      | -      | -      | -      | -      | <0.005 |
|        |        |        |        |        |        |        |        |
| 5      | -      | -      | -      | -      | -      | -      | <4     |
|        |        |        |        |        |        |        |        |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| 1500   | -      | -      | -      | -      | -      | -      | <5     |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| 100    | -      | -      | -      | -      | -      | -      | <1     |
| 3      | -      | -      | -      | -      | -      | -      | <1     |
| 60     | -      | -      | -      | -      | -      | -      | <50    |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | <10    |

Note: Treated water was not being discharged at Talbingo and Tantangara Reservoirs at the time of EPL sampling

- \* 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
- <sup>^</sup> 90 Percentile concentration limit/100 Percentile limit
- <sup>#</sup> 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 EPL Sampling: 5 - 24 September 2022**

|                                             |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Protection Licence No:</b> | 21266                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Licensee:</b>                            | Snowy Hydro Limited                                                                                                                                                                                                                                                                                                                                                     |
| <b>Licensee address:</b>                    | PO Box 332, Cooma, NSW 2630                                                                                                                                                                                                                                                                                                                                             |
| <b>Premises:</b>                            | Snowy 2.0 Pumped Hydro Power Station Talbingo and Tantangara, Kosciuszko National Park and Rock Forest, Kosciuszko NSW 2642                                                                                                                                                                                                                                             |
| <b>EPA Public Register:</b>                 | <a href="https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued">https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued</a> |

Monthly water sampling and analysis is performed as part of the Snowy 2.0 Approval Conditions, Environmental Protection Licence No 21266 - Variation 6 July 2022, and the approved Water Management Plan to ensure that works are not impacting on nearby receiving waters.

A map showing the location of each of the EPL named sampling points is provided after the results tables.

Sampling in Septmeber was undertaken following rainfall events when sampling for EPL 10 and 11.

Exceedances at Rock Forest, Lobs Hole, Marica and Tantangara are generally consistent upstream and downstream of the project with the exception of phosphorus, oil and grease and a number of sampling locations. No visible indicators of oil and grease were observed during sampling. Further investigation is being carried out to determine the source of these exceedances.

Due to a complication with the laboratory, BOD is unavailable for EPL 10, 11 and 41.

The publication of this pollution monitoring data is carried out in accordance with section 66 (6) of the Protection of the Environment Operations Act 1997 (NSW).

Snowy Hydro Limited gives no warranty or representation regarding the data suitability for any particular purpose.

Snowy Hydro Limited excludes all liability to any person for loss or damage of any kind (however caused, including but not limited to by negligence) arising whether directly or indirectly from or relating in any way to the use of this data, whether in whole or in part.



Snowy Hydro 2.0 Main Works

Monthly EPL Sampling: 5 - 24 September 2022 - Talbingo and Tantangara Reservoir

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| Field                                    |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8                            |
| Electrical Conductivity                  | µS/cm        | -                  | 20-30                            |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen                         | % saturation | -                  | 90-110                           |
| Turbidity                                | NTU          | -                  | 1-20                             |
| Laboratory analytes                      |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| Nutrients                                |              |                    |                                  |
| Ammonia as N                             | µg/L         | 5                  | 10                               |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | 5                                |
| Phosphorus (Total)                       | µg/L         | 5                  | 10                               |
| Inorganics                               |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | 7                                |
| Hydrocarbons                             |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 5                                |
| Metals                                   |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| Biological                               |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biochemical Oxygen Demand                | mg/L         | 2                  | 1/5^                             |

| EPL10 | EPL11 | EPL28 | EPL29 | EPL32 | EPL38 | EPL39 | EPL40 | EPL51 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       |       |       |       |       |       |       |       |       |
| 7.6   | 7.9   | 6.05  | 6.37  | 6.12  | 6.98  | 6.14  | 6.01  | 6.27  |
| 53    | 72    | 11.7  | 10.4  | 10.2  | 11.5  | 9.6   | 10.9  | 10.3  |
| 194   | 178   | 300.3 | 271   | 279.5 | 282.5 | 192.6 | 278.6 | 265.5 |
| 12.31 | 12.57 | 7.8   | 7.8   | 7.8   | 7.7   | 7.2   | 7.2   | 7.7   |
| 79.4  | 90.6  | 84.6  | 82    | 91.3  | 83.9  | 90.6  | 86.6  | 85.1  |
| 0     | 2.2   | 4.2   | 3.4   | 2.95  | 3.18  | 9     | 4.27  | 3.34  |
| < 5   | < 5   | <5    | <5    | <5    | <5    | 5.3   | <5    | <5    |
| 21.00 | 21.00 | <5    | <5    | 5     | 5.6   | 5     | 6.4   | 5.5   |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 220   | 330   | 90    | 160   | 160   | 60    | 50    | 60    | 40    |
| 210   | 320   | 90    | 160   | 440   | 60    | 50    | 60.0  | 40    |
| 1.0   | <1    | <1    | <1    | <1    | <1    | 7     | <1    | <1    |
| <5    | 6.00  | 9.0   | 16.0  | <5    | 100.0 | 15    | <5    | 44    |
| <4    | <4    | <4    | <4    | 5.00  | <4    | <4    | <4    | 4     |
| 28    | 17    | <5    | 51    | 60    | <5    | <5    | <5    | <5    |
| 6.00  | 8.0   | 14    | 15    | 17    | 60    | 21    | 40    | 50    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <50   | <50   | <50   | <50   | <50   | 70    | 80    | 70    | 60    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| 10.0  | 10.0  | <5    | <5    | <5    | <5    | <5    | <5    | 6     |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <2    | <1    | <1    | -     | -     | -     | -     | -     | <1    |
| -     | -     | <10   | -     | -     | -     | -     | -     | <5    |

\* 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: 05 - 24 September 2022- Surface Water**

| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------|--------------|--------------------|----------------------------------|
| Field                         |              |                    |                                  |
| pH                            | -            | -                  | 6.5-8                            |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value |
| Temperature                   | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen              | % saturation | -                  | 90-110                           |
| Turbidity                     | NTU          | -                  | 2-25                             |
| Laboratory analytes           |              |                    |                                  |
| TSS                           | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO3             | mg/L         | 1                  | No Water Quality Objective Value |
| Nutrients                     |              |                    |                                  |
| Ammonia as N                  | µg/L         | 5                  | 13                               |
| Kjeldahl Nitrogen Total       | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               |
| Phosphorus (Total)            | µg/L         | 5                  | 20                               |
| Inorganics                    |              |                    |                                  |
| Cyanide Total                 | µg/L         | 4                  | 4                                |
| Hydrocarbons                  |              |                    |                                  |
| Oil and Grease                | mg/L         | 5                  | 5                                |
| Metals                        |              |                    |                                  |
| Aluminium (dissolved)         | µg/L         | 5.0                | 27                               |
| Arsenic (dissolved)           | µg/L         | 1.0                | 0.8                              |
| Chromium (III+VI) (dissolved) | µg/L         | 1.0                | 0.01                             |
| Copper (dissolved)            | µg/L         | 1.0                | 1                                |
| Iron (dissolved)              | µg/L         | 50.0               | 300                              |
| Lead (dissolved)              | µg/L         | 1.0                | 1                                |
| Manganese (dissolved)         | µg/L         | 5.0                | 1,200                            |
| Nickel (dissolved)            | µg/L         | 1.0                | 8                                |
| Silver (dissolved)            | µg/L         | 5.0                | 0.02                             |
| Zinc (dissolved)              | µg/L         | 5.0                | 2.4                              |

| EPL5  | EPL6  | EPL8  | EPL9  | EPL12 | EPL14 | EPL15 | EPL16 | EPL24 | EPL26 | EPL27 | EPL30 | EPL31 | EPL33 | EPL34 | EPL35 | EPL36 | EPL37 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 7.6   | 8.03  | 8.03  | 7.73  | 7.86  | 7.9   | 7.92  | 7.7   | 7.6   | 7.3   | 7.8   | 6.5   | 6.5   | 7.0   | 6.4   | 6.5   | 6.7   | 6.4   |
| 65.0  | 83.0  | 83.0  | 75.0  | 67.0  | 78.0  | 70.0  | 75.0  | 62.0  | 17.7  | 19.3  | 14.2  | 13.5  | 10.1  | 9.1   | 8.2   | 25.2  | 22.0  |
| 152   | 170   | 170   | -37   | 155   | 210   | 189   | 155.0 | 96.0  | 65.5  | 55.4  | 239.9 | 245.7 | 250.3 | 233.5 | 241.6 | 195.0 | 215.3 |
| 10.65 | 10.78 | 10.78 | 6.98  | 10.58 | 10.17 | 10.58 | 7.0   | 8.2   | 8.3   | 8.3   | 9.4   | 9.5   | 7.9   | 8.1   | 8.0   | 9.4   | 9.5   |
| 118.4 | 105.4 | 122.6 | 120.9 | 125.6 | 127.7 | 118.8 | 120.9 | 129.6 | 83.3  | 81.4  | 75.1  | 78.6  | 73.6  | 78.7  | 73.5  | 82.6  | 89.7  |
| 1.5   | 1.4   | 50    | 1.1   | 0.9   | 1.1   | 0.8   | 1.1   | 3.9   | 5.3   | 6.1   | 12.3  | 8.2   | 3.9   | 4.3   | 5.2   | 3.8   | 5.7   |
|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| < 5   | < 5   | < 5   | < 5   | < 5   | 360   | < 5   | < 5   | < 5   | <5    | <5    | 7.9   | 8.9   | <5    | <5    | <5    | <5    | 5.5   |
| 28    | 38    | 39    | 31    | 28    | 32    | 31    | 31    | 26.0  | 10    | 9.9   | 8.2   | 6.6   | 5.5   | <5    | <5    | 9.6   | 12    |
|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 20    | 21    | 35    | 11    | 24    | 13    | <5    | 16    | 20    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 100   | 610   | 160   | <10   | 420   | 170   | 390   | 270   | 170   | 70    | 60    | <10   | 30.0  | 30    | 50.0  | 70.0  | <10   | 460   |
| 3000  | 620   | 160   | 2200  | 430   | 170   | 400   | 270   | 170   | 70    | 60    | 70    | 30    | 30    | 50    | 110   | 440   | 550   |
| <1    | <1    | 4     | 3     | 3     | 5     | 3     | 3     | 9     | <1    | <1    | <1    | <1    | <1    | 3     | <1    | <1    | <1    |
| 15    | 13    | 10    | 19    | 15    | 16    | 14    | 12    | 25    | <5    | 13    | 14    | 18    | 17    | 27    | 11    | 21    | 25    |
|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | <4    | 5.0   | <4    | <4    | <4    | <4    | <4    | <4    |
|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 7.0   | 14.0  | 7.0   | <5    | 8     | 26.0  | 9     | 6.0   | 8     | 15    | <5    | 45    | 38    | 40    | 27    | 35    | 54    | 64    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | 2     | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | 1.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | 2     | <1    |
| <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | 80    | 60    | 60    | 70    | 80    | 280   | 260   |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | 24.0  | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 13    | 14    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <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.

**Snowy Hydro 2.0 Main Works**  
**Monthly EPL Sampling: 05 - 24 September 2022 - Treated Water**

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Flow Rate</b>                         |              |                    |                                  |
| Inflow <sup>#</sup>                      | ML/day       |                    |                                  |
| Outflow <sup>#</sup>                     | ML/day       |                    | 4.32 (EPL 43 / 50)               |
| <b>Field</b>                             |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8.5                          |
| Electrical Conductivity                  | µS/cm        | -                  | 700 (EPL 41) / 200 (EPL 50)      |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | 15                               |
| Dissolved Oxygen                         | % saturation | -                  | No Water Quality Objective Value |
| Turbidity                                | NTU          | -                  | <25                              |
| <b>Laboratory analytes</b>               |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | 5/10                             |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                         |              |                    |                                  |
| Ammonia as N                             | mg/L         | 0.005              | 0.2/2^                           |
| Kjeldahl Nitrogen Total                  | mg/L         | 0.010              | No Water Quality Objective Value |
| Nitrogen (Total)                         | mg/L         | 0.010              | 350                              |
| Reactive Phosphorus                      | mg/L         | 0.001              | No Water Quality Objective Value |
| Phosphorus (Total)                       | mg/L         | 0.005              | 0.1/0.3^                         |
| <b>Inorganics</b>                        |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | No Water Quality Objective Value |
| <b>Hydrocarbons</b>                      |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 2/5^                             |
| <b>Metals</b>                            |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| <b>Biological</b>                        |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biological Oxygen Demand                 | mg/L         | 2                  | 1/5^                             |

| EPL 41 | EPL 43 | EPL 44 | EPL 45 | EPL 47 | EPL 48 | EPL 49 | EPL 50 |
|--------|--------|--------|--------|--------|--------|--------|--------|
|        |        |        |        |        |        |        |        |
| -      | -      | 0.2290 | 0.0650 | 0.1004 | 0.0571 | 0.0233 | -      |
| -      | 0.5310 | -      | -      | -      | -      | -      | -      |
|        |        |        |        |        |        |        |        |
| 9.05   | -      | -      | -      | -      | -      | -      | 7.2    |
| 199    | -      | -      | -      | -      | -      | -      | 6      |
| 130    | -      | -      | -      | -      | -      | -      | 172.9  |
| 13.85  | -      | -      | -      | -      | -      | -      | 8.3    |
| 24.5   | -      | -      | -      | -      | -      | -      | 72.6   |
| 21.6   | -      | -      | -      | -      | -      | -      | 0.3    |
|        |        |        |        |        |        |        |        |
| 6.7    | -      | -      | -      | -      | -      | -      | <5     |
| 13     | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| <0.005 | -      | -      | -      | -      | -      | -      | <0.005 |
| 0.35   | -      | -      | -      | -      | -      | -      | <0.010 |
| 0.31   | -      | -      | -      | -      | -      | -      | 0.25   |
| 0.024  | -      | -      | -      | -      | -      | -      | <0.001 |
| 0.066  | -      | -      | -      | -      | -      | -      | <0.005 |
|        |        |        |        |        |        |        |        |
| 8      | -      | -      | -      | -      | -      | -      | <4     |
|        |        |        |        |        |        |        |        |
| 15     | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| 3900   | -      | -      | -      | -      | -      | -      | <5     |
| 5      | -      | -      | -      | -      | -      | -      | <1     |
| 400    | -      | -      | -      | -      | -      | -      | <1     |
| 6      | -      | -      | -      | -      | -      | -      | <1     |
| 830    | -      | -      | -      | -      | -      | -      | <50    |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| 49     | -      | -      | -      | -      | -      | -      | <5     |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| -      | -      | -      | -      | -      | -      | -      | <5     |

Note: Treated water was not being discharged at Talbingo and Tantangara Reservoirs at the time of EPL sampling

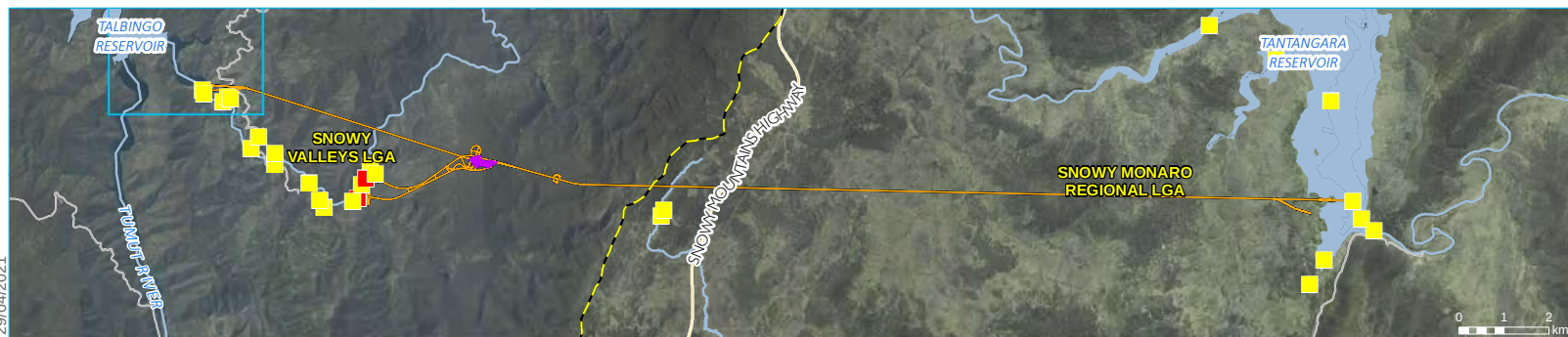
\* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

- Samples not required

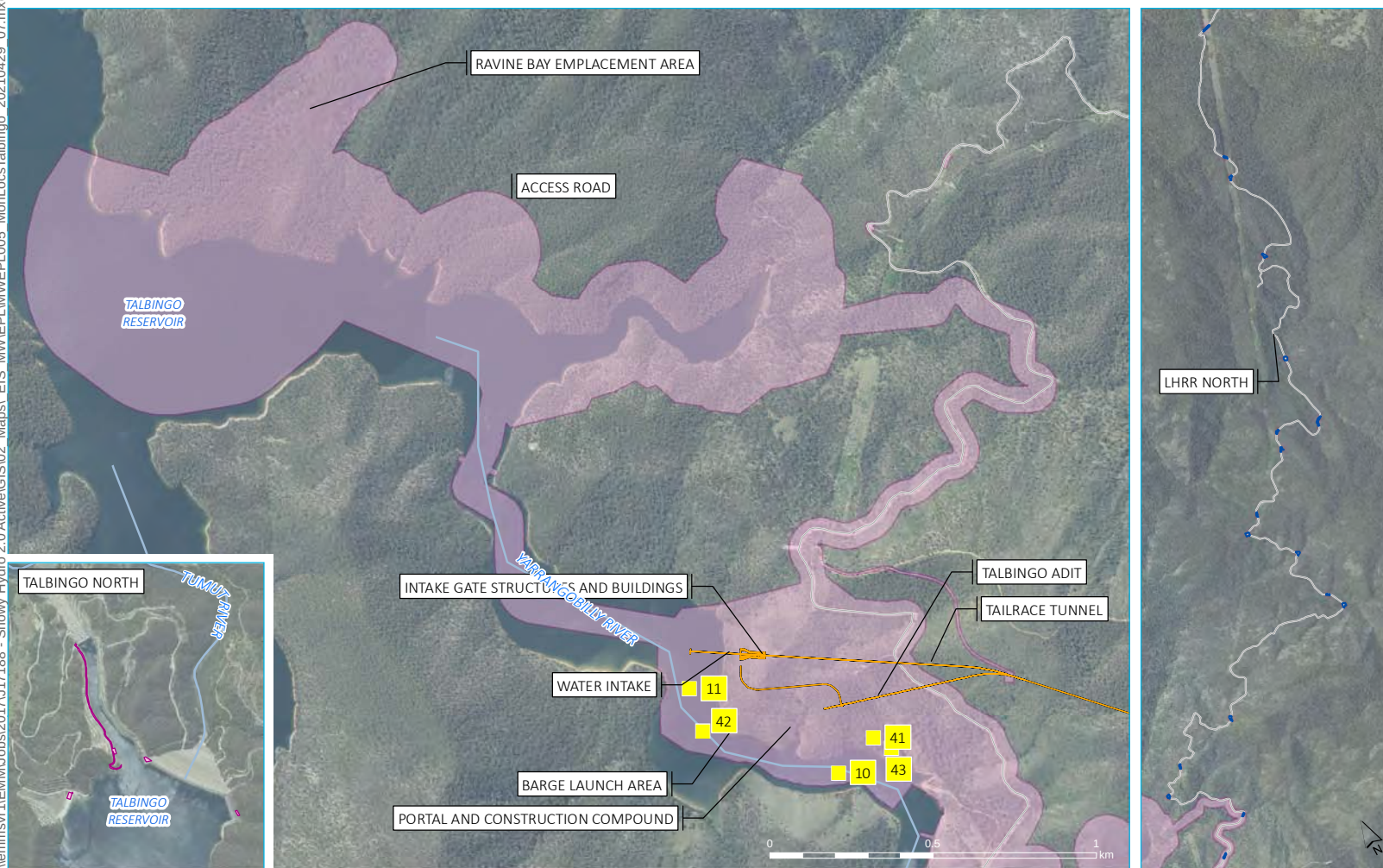
^ 90 Percentile concentration limit/100 Percentile limit

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

\\emmsvr1\EMMAJ\obs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL005 MonLocsTalbingo 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Talbingo Reservoir

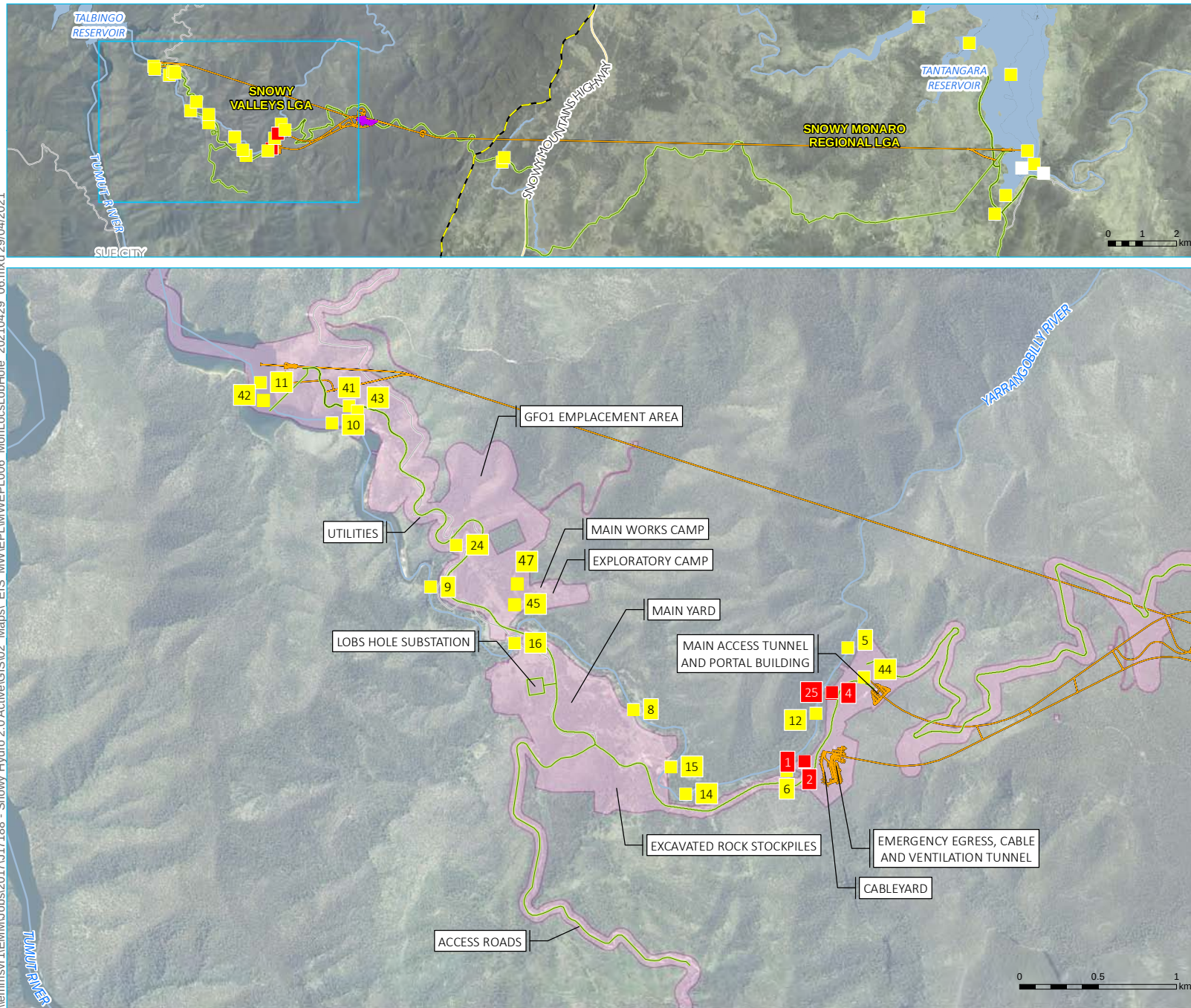
Snowy 2.0  
Main Works  
Figure 1



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55

\\lemmsvr1\EMMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL006 MonLocsLobHole 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Lobs Hole

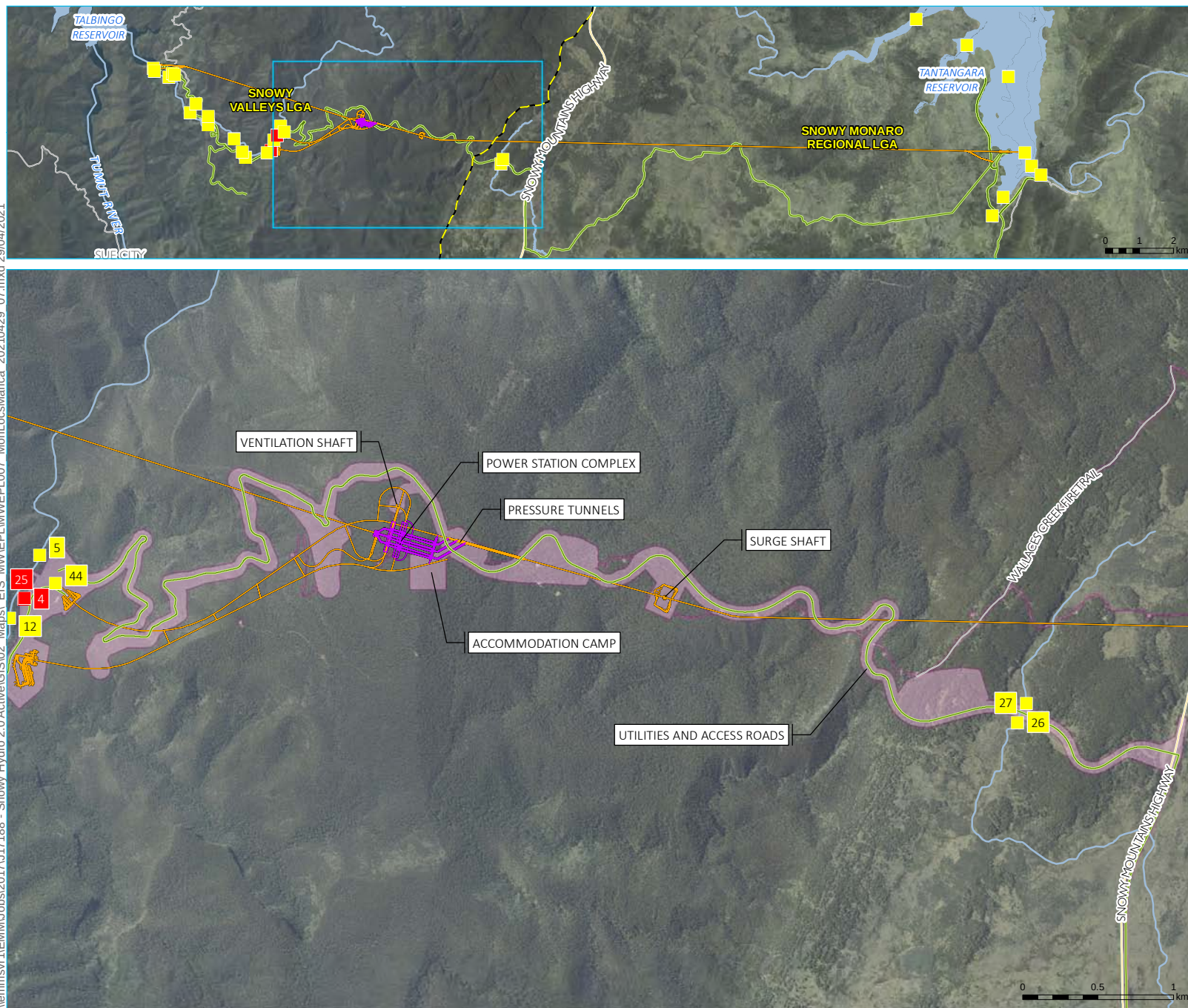
Snowy 2.0  
Main Works  
Figure 2

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL007 MonLocsMarica 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Marica

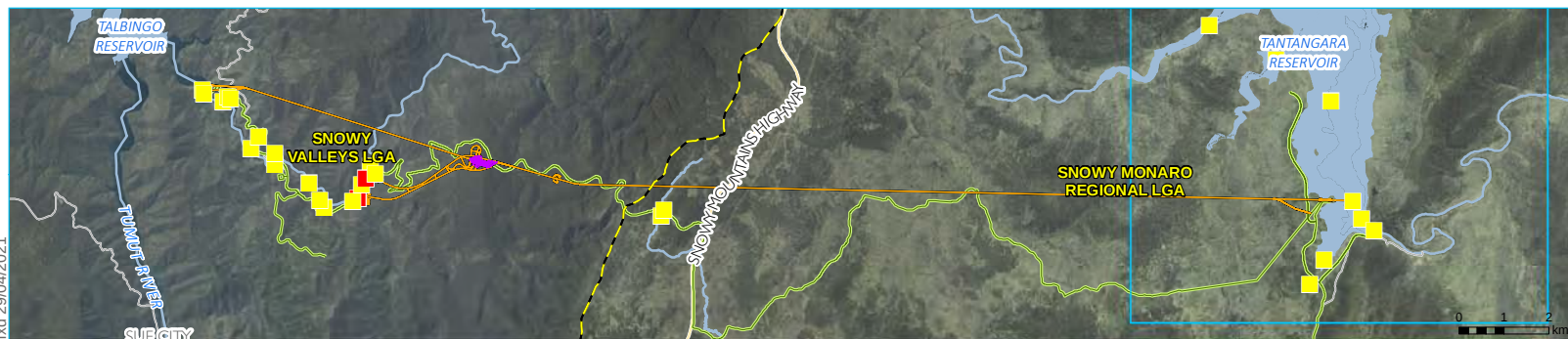
Snowy 2.0  
Main Works  
Figure 3



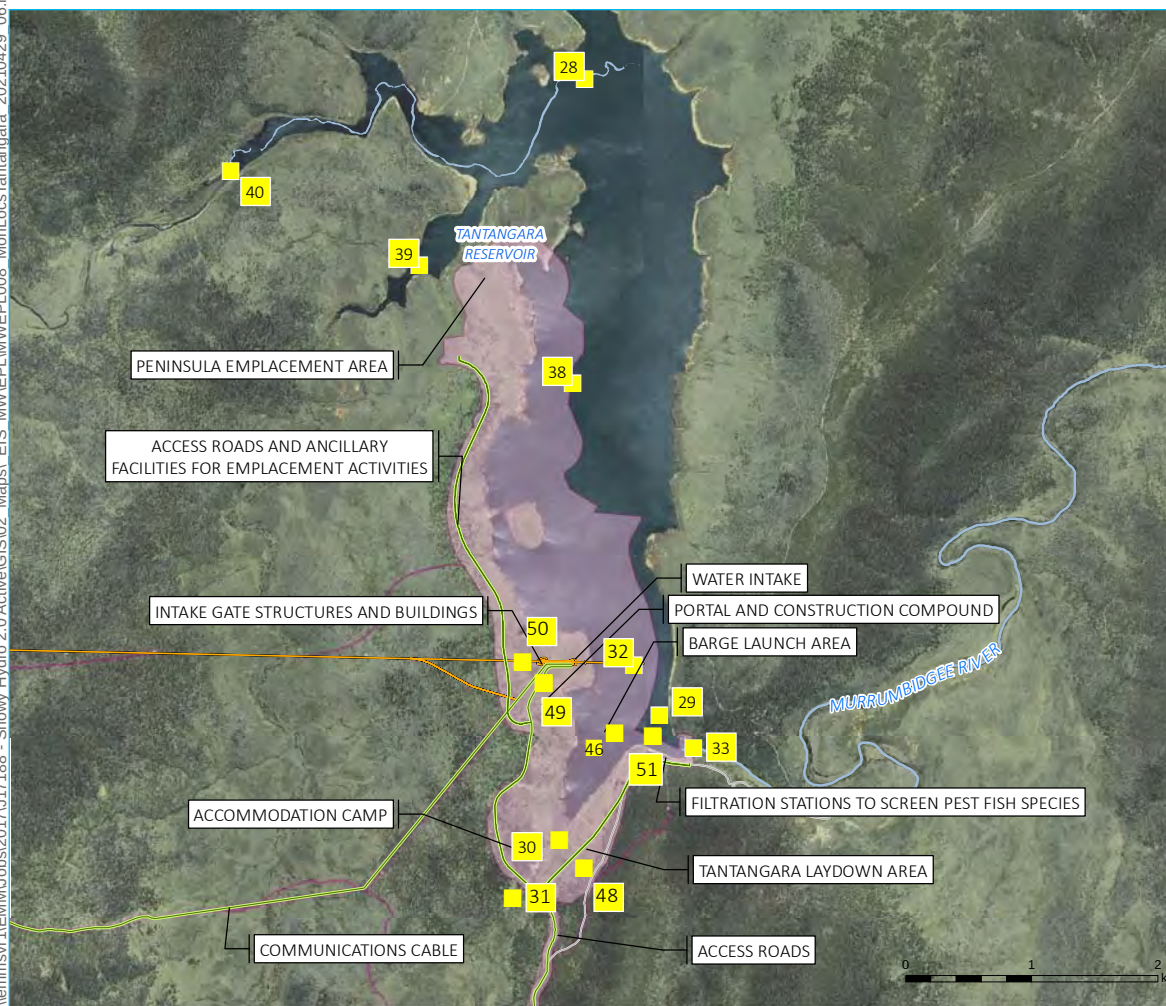
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55

\\emmsvr1\EMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL008 MonLocsTantangara 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Tantangara Reservoir

Snowy 2.0  
Main Works  
Figure 4

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\emmsvr1\EMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL009 MonLocsRockForest\_20210429\_06.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Rock Forest

Snowy 2.0  
Main Works  
Figure 5



## **Snowy Hydro 2.0 Main Works EPL Sampling: 1 - 30 October 2022**

|                                             |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Protection Licence No:</b> | 21266                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Licensee:</b>                            | Snowy Hydro Limited                                                                                                                                                                                                                                                                                                                                                     |
| <b>Licensee address:</b>                    | PO Box 332, Cooma, NSW 2630                                                                                                                                                                                                                                                                                                                                             |
| <b>Premises:</b>                            | Snowy 2.0 Pumped Hydro Power Station Talbingo and Tantangara, Kosciuszko National Park and Rock Forest, Kosciuszko NSW 2642                                                                                                                                                                                                                                             |
| <b>EPA Public Register:</b>                 | <a href="https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued">https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued</a> |

Monthly water sampling and analysis is performed as part of the Snowy 2.0 Approval Conditions, Environmental Protection Licence No 21266 - Variation 5 October 2022, and the approved Water Management Plan to ensure that works are not impacting on nearby receiving waters.

A map showing the location of each of the EPL named sampling points is provided after the results tables.

Exceedances at Rock Forest, Lobs Hole and Tantangara are generally consistent with baseline data with the exception of select analytes at a number of sampling locations. Surface water exceedances for metals (aluminium and copper) are consistent with baseline concentrations as identified in the SWMP. Oil & Grease concentrations at EPL 30 and EPL 34 only marginally exceeded the WQOs, with more significant exceedances at the two Rock Forest EPL locations (EPL 36 and EPL 37). These exceedances are likely attributed to off-site agricultural activities as the upstream location (EPL 36) has no input from Rock Forest. The oil and grease exceedances that are consistent accross Tantangara and Talbingo Reservoirs could pertain to error during the sampling process. Further investigation will be undertaken to determine the source of these exceedances. Phosphorous concentrations at EPL 16 and EPL 30 are marginally exceeding the WQO with EPL 14 and EPL 35 showing more significant exceedances. These could be a result of run-off derived from soil or plant materials. The EPL 9 total cyanide exceedance is likely a result of human error during the sampling process as it was the only exceedance accross the project EPL locations. Further investigation is being carried out to determine the source of this exceedance.

Dissolved oxygen (mg/L) and redox (mV) results are not available for EPL 10, EPL 11 and EPL 41 due to water quality meter error.

Due to issues with the laboratory and malfunction of the water monitoring equipment, Marica EPL sampling was not completed in October 2022 (EPL 26 and EPL 27).

No discharge of treated water to Tantangara or Talbingo Reservoirs was occurring at the time of sampling.

The publication of this pollution monitoring data is carried out in accordance with section 66 (6) of the Protection of the Environment Operations Act 1997 (NSW).

Snowy Hydro Limited gives no warranty or representation regarding the data suitability for any particular purpose.

Snowy Hydro Limited excludes all liability to any person for loss or damage of any kind (however caused, including but not limited to by negligence) arising whether directly or indirectly from or relating in any way to the use of this data, whether in whole or in part.



Snowy Hydro 2.0 Main Works  
Monthly EPL Sampling: 1 - 30 October 2022 - Talbingo and Tantangara Reservoir

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| Field                                    |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8                            |
| Electrical Conductivity                  | µS/cm        | -                  | 20-30                            |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen                         | % saturation | -                  | 90-110                           |
| Turbidity                                | NTU          | -                  | 1-20                             |
| Laboratory analytes                      |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| Nutrients                                |              |                    |                                  |
| Ammonia as N                             | µg/L         | 5                  | 10                               |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | 5                                |
| Phosphorus (Total)                       | µg/L         | 5                  | 10                               |
| Inorganics                               |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | 7                                |
| Hydrocarbons                             |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 5                                |
| Metals                                   |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| Biological                               |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biochemical Oxygen Demand                | mg/L         | 2                  | 1/5^                             |

| EPL10 | EPL11 | EPL28 | EPL29 | EPL32 | EPL38 | EPL39 | EPL40 | EPL51 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       |       |       |       |       |       |       |       |       |
| 7.8   | 7.8   | 6.0   | 6.1   | 6.3   | 6.1   | 6.0   | 5.9   | 6.1   |
| 56.2  | 55.4  | 11.0  | 11.1  | 11.1  | 12.1  | 9.9   | 10.7  | 11.2  |
|       |       | 216.4 | 261.7 | 253.9 | 269.5 | 237.5 | 227.9 | 261.4 |
| 17.6  | 17.2  | 9.5   | 9.3   | 9.5   | 9.3   | 8.8   | 8.3   | 9.4   |
| 108.7 | 107.1 | 110.9 | 92.3  | 92.7  | 93.5  | 91.0  | 96.5  | 92.4  |
| 2.7   | 2.8   | 3.8   | 3.1   | 3.2   | 3.0   | 2.6   | 2.6   | 3.8   |
|       |       |       |       |       |       |       |       |       |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 19.0  | 26.0  | <5    | 6.0   | 6.0   | 5.9   | 4.8   | 6.1   | <5    |
|       |       |       |       |       |       |       |       |       |
| <5    | <5    | <5    | 25.0  | <5    | <5    | <5    | 25.0  | <5    |
| 100.0 | 50.0  | 100.0 | 130.0 | 100.0 | 90.0  | 100.0 | 80.0  | 120.0 |
| 100.0 | 50.0  | 100.0 | 130.0 | 100.0 | 90.0  | 100.0 | 80.0  | 160.0 |
| 20.0  | 2.0   | 1.0   | 2.0   | 3.0   | 2.0   | 3.0   | 3.0   | <1    |
| 6.0   | <5    | 19.0  | 20.0  | 91.0  | 15.0  | 14.0  | 37.0  | 11.0  |
|       |       |       |       |       |       |       |       |       |
| <4    | 4.0   | <4    | <4    | <4    | <4    | <4    | <4    | <4    |
|       |       |       |       |       |       |       |       |       |
| 25.0  | 53.0  | 12.0  | 11.0  | 11.0  | 15.0  | 8.6   | 11.0  | 9.7   |
|       |       |       |       |       |       |       |       |       |
| 17.0  | 14.0  | 53.0  | 47.0  | 62.0  | 46.0  | 59.0  | 21.0  | 45.0  |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| 1.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | 3.0   | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <50   | <50   | 70.0  | 60.0  | 80.0  | 60.0  | 70.0  | <50   | 60.0  |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 7.0   | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
|       |       |       |       |       |       |       |       |       |
| <1    | <1    | <1    | -     | -     | -     | -     | -     | <1    |
| <5    | <5    | <5    | -     | -     | -     | -     | -     | <5    |

\* 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 October 2022- Surface Water**

| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------|--------------|--------------------|----------------------------------|
| Field                         |              |                    |                                  |
| pH                            | -            | -                  | 6.5-8                            |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value |
| Temperature                   | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen              | % saturation | -                  | 90-110                           |
| Turbidity                     | NTU          | -                  | 2-25                             |
| Laboratory analytes           |              |                    |                                  |
| TSS                           | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO3             | mg/L         | 1                  | No Water Quality Objective Value |
| Nutrients                     |              |                    |                                  |
| Ammonia as N                  | µg/L         | 5                  | 13                               |
| Kjeldahl Nitrogen Total       | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               |
| Phosphorus (Total)            | µg/L         | 5                  | 20                               |
| Inorganics                    |              |                    |                                  |
| Cyanide Total                 | µg/L         | 4                  | 4                                |
| Hydrocarbons                  |              |                    |                                  |
| Oil and Grease                | mg/L         | 5                  | 5                                |
| Metals                        |              |                    |                                  |
| Aluminium (dissolved)         | µg/L         | 5.0                | 27                               |
| Arsenic (dissolved)           | µg/L         | 1.0                | 0.8                              |
| Chromium (III+VI) (dissolved) | µg/L         | 1.0                | 0.01                             |
| Copper (dissolved)            | µg/L         | 1.0                | 1                                |
| Iron (dissolved)              | µg/L         | 50.0               | 300                              |
| Lead (dissolved)              | µg/L         | 1.0                | 1                                |
| Manganese (dissolved)         | µg/L         | 5.0                | 1,200                            |
| Nickel (dissolved)            | µg/L         | 1.0                | 8                                |
| Silver (dissolved)            | µg/L         | 5.0                | 0.02                             |
| Zinc (dissolved)              | µg/L         | 5.0                | 2.4                              |

| EPL5  | EPL6  | EPL8 | EPL9  | EPL12 | EPL14 | EPL15 | EPL16 | EPL24 | EPL26 | EPL27 | EPL30 | EPL31 | EPL33 | EPL34 | EPL35 | EPL36 | EPL37 |
|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 6.9   | 7.6   | 7.5  | 7.8   | 7.5   | 7.6   | 7.6   | 7.5   | 7.3   | -     | -     | 6.4   | 6.0   | 5.9   | 5.9   | 5.9   | 8.2   | 6.4   |
| 54.0  | 77.0  | 81.0 | 66.0  | 59.0  | 80.0  | 66.0  | 66.0  | 57.0  | -     | -     | 12.5  | 10.7  | 10.8  | 7.9   | 7.9   | 22.5  | 20.6  |
| 97    | 128   | 170  | 134   | 71    | 153   | 160   | 176.0 | 127.0 | -     | -     | 218.1 | 245.3 | 248.5 | 227.8 | 229.2 | 88.8  | 214.2 |
| 9.5   | 8.9   | 10.9 | 13.1  | 11.0  | 9.5   | 10.4  | 11.0  | 16.6  | -     | -     | 10.2  | 9.9   | 9.1   | 8.6   | 8.5   | 9.5   | 10.2  |
| 85.7  | 91.5  | 90.1 | 62.7  | 92.7  | 87.6  | 92.6  | 87.1  | 64.9  | -     | -     | 83.8  | 90.6  | 89.5  | 85.7  | 92.5  | 106.4 | 89.8  |
| 8     | 9     | 7    | 7     | 6     | 6     | 7.5   | 6.0   | 6.0   | -     | -     | 5.5   | 4.2   | 3.7   | 3.6   | 3.8   | 4.6   | 5.2   |
| <5    | <5    | <5   | <5    | <5    | <5    | <5    | <5    | <5    | -     | -     | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 27.0  | 38.0  | 39.0 | 36.0  | 30.0  | 42.0  | 33.0  | 34.0  | 27.0  | -     | -     | 6.4   | 6.0   | 6.1   | 4.2   | 4.2   | 12.0  | 12.0  |
| <5    | <5    | <5   | <5    | <5    | <5    | <5    | <5    | <5    | -     | -     | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| 140.0 | 60.0  | 50.0 | 40.0  | 40.0  | 20.0  | 100.0 | 30.0  | 50.0  | -     | -     | 90.0  | 90.0  | 100.0 | 90.0  | 100.0 | 80.0  | 40.0  |
| 140.0 | 100.0 | 50.0 | 40.0  | 40.0  | 20.0  | 120.0 | 30.0  | 50.0  | -     | -     | 90.0  | 90.0  | 100.0 | 90.0  | 100.0 | 80.0  | 40.0  |
| 4.0   | 5.0   | 4.0  | 4.0   | 4.0   | 5.0   | 4.0   | 8.0   | 2.0   | -     | -     | 3.0   | 3.0   | 3.0   | 2.0   | 2.0   | 2.0   | 3.0   |
| <5    | <5    | 8.0  | 7.0   | <5    | 190.0 | <5    | 23.0  | 10.0  | -     | -     | 24.0  | 10.0  | 14.0  | 11.0  | 110.0 | 12.0  | 18.0  |
| <4    | <4    | <4   | 230.0 | <4    | <4    | <4    | <4    | <4    | -     | -     | <4    | <4    | <4    | <4    | <4    | <4    | <4    |
| <5    | <5    | <5   | <5    | <5    | <5    | <5    | <5    | <5    | -     | -     | 5.5   | <5    | <5    | 6.1   | <5    | 12.0  | 29.0  |
| 44.0  | 19.0  | 36.0 | 36.0  | 26.0  | 23.0  | 26.0  | 32.0  | 38.0  | -     | -     | 23.0  | 17.0  | 44.0  | 39.0  | 21.0  | 35.0  | 30.0  |
| <1    | <1    | <1   | <1    | <1    | <1    | <1    | <1    | <1    | -     | -     | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1   | <1    | <1    | <1    | <1    | <1    | <1    | -     | -     | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1   | <1    | <1    | <1    | <1    | <1    | <1    | -     | -     | <1    | <1    | <1    | 1.0   | <1    | <1    | <1    |
| <50   | <50   | <50  | <50   | <50   | <50   | <50   | <50   | <50   | -     | -     | <50   | <50   | <50   | <50   | <50   | 150.0 | 150.0 |
| <1    | <1    | <1   | <1    | <1    | <1    | <1    | <1    | <1    | -     | -     | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5   | <5    | <5    | <5    | <5    | <5    | 29.0  | -     | -     | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <1    | <1    | <1   | <1    | <1    | <1    | <1    | <1    | <1    | -     | -     | <1    | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5   | <5    | <5    | <5    | <5    | <5    | <5    | -     | -     | <5    | <5    | <5    | <5    | <5    | <5    | <5    |
| <5    | <5    | <5   | <5    | <5    | <5    | <5    | <5    | <5    | -     | -     | <5    | <5    | <5    | <5    | <5    | <5    | <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.

**Snowy Hydro 2.0 Main Works**  
**Monthly EPL Sampling: 01 - 31 October 2022 - Treated Water**

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Flow Rate</b>                         |              |                    |                                  |
| Inflow <sup>#</sup>                      | ML/day       |                    |                                  |
| Outflow <sup>#</sup>                     | ML/day       |                    | 4.32 (EPL 43 / 50)               |
| <b>Field</b>                             |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8.5                          |
| Electrical Conductivity                  | µS/cm        | -                  | 700 (EPL 41) / 200 (EPL 50)      |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | 15                               |
| Dissolved Oxygen                         | % saturation | -                  | No Water Quality Objective Value |
| Turbidity                                | NTU          | -                  | <25                              |
| <b>Laboratory analytes</b>               |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | 5/10                             |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                         |              |                    |                                  |
| Ammonia as N                             | mg/L         | 5                  | 0.2/2^                           |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | No Water Quality Objective Value |
| Phosphorus (Total)                       | mg/L         | 5                  | 0.1/0.3^                         |
| <b>Inorganics</b>                        |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | No Water Quality Objective Value |
| <b>Hydrocarbons</b>                      |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 2/5^                             |
| <b>Metals</b>                            |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| <b>Biological</b>                        |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biological Oxygen Demand                 | mg/L         |                    | 5                                |

| EPL 41  | EPL 43 | EPL 44 | EPL 45 | EPL 47 | EPL 48 | EPL 49 | EPL 50 |
|---------|--------|--------|--------|--------|--------|--------|--------|
|         |        |        |        |        |        |        |        |
| -       | -      | 0.8446 | 0.0422 | 0.0902 | 0.0591 | 0.0632 | -      |
| -       | 0.5145 | -      | -      | -      | -      | -      | -      |
|         |        |        |        |        |        |        |        |
| 8.1     | -      | -      | -      | -      | -      | -      | 6.5    |
| 346.0   | -      | -      | -      | -      | -      | -      | 7.3    |
| 504.0   | -      | -      | -      | -      | -      | -      | 205.8  |
| 20.4    | -      | -      | -      | -      | -      | -      | 10.9   |
| 107.4   | -      | -      | -      | -      | -      | -      | 78.8   |
| 30.2    | -      | -      | -      | -      | -      | -      | 1.7    |
|         |        |        |        |        |        |        |        |
| 24.0    | -      | -      | -      | -      | -      | -      | <5     |
| <5      | -      | -      | -      | -      | -      | -      | <5     |
|         |        |        |        |        |        |        |        |
| <5      | -      | -      | -      | -      | -      | -      | 44.0   |
| 25000.0 | -      | -      | -      | -      | -      | -      | 130.0  |
| 24000.0 | -      | -      | -      | -      | -      | -      | 360.0  |
| 4.0     | -      | -      | -      | -      | -      | -      | 18.0   |
| 0.0     | -      | -      | -      | -      | -      | -      | 0.0    |
|         |        |        |        |        |        |        |        |
| <4      | -      | -      | -      | -      | -      | -      | <4     |
|         |        |        |        |        |        |        |        |
| 13.0    | -      | -      | -      | -      | -      | -      | <5     |
|         |        |        |        |        |        |        |        |
| 110.0   | -      | -      | -      | -      | -      | -      | <5     |
| 1.0     | -      | -      | -      | -      | -      | -      | <1     |
| 48.0    | -      | -      | -      | -      | -      | -      | <1     |
| 4.0     | -      | -      | -      | -      | -      | -      | <1     |
| 50.0    | -      | -      | -      | -      | -      | -      | <50    |
| 1.0     | -      | -      | -      | -      | -      | -      | <1     |
| 5.0     | -      | -      | -      | -      | -      | -      | <5     |
| 1.0     | -      | -      | -      | -      | -      | -      | <1     |
| 5.0     | -      | -      | -      | -      | -      | -      | <5     |
| 5.0     | -      | -      | -      | -      | -      | -      | <5     |
|         |        |        |        |        |        |        |        |
| <1      | -      | -      | -      | -      | -      | -      | <1     |
| <5      | -      | -      | -      | -      | -      | -      | <5     |

Note: Treated water was not being discharged at Talbingo and Tantangara Reservoirs at the time of EPL sampling

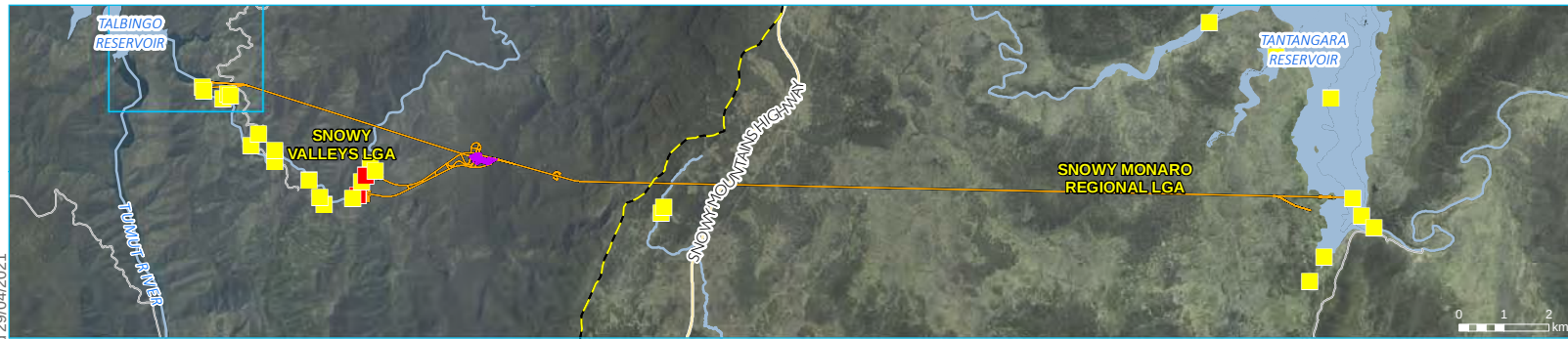
\* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

- Samples not required

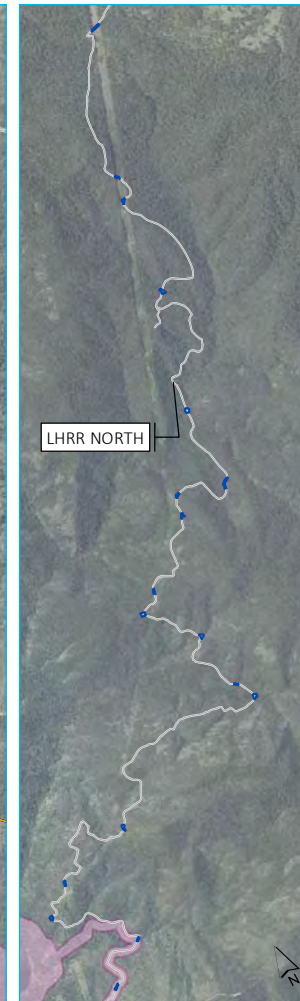
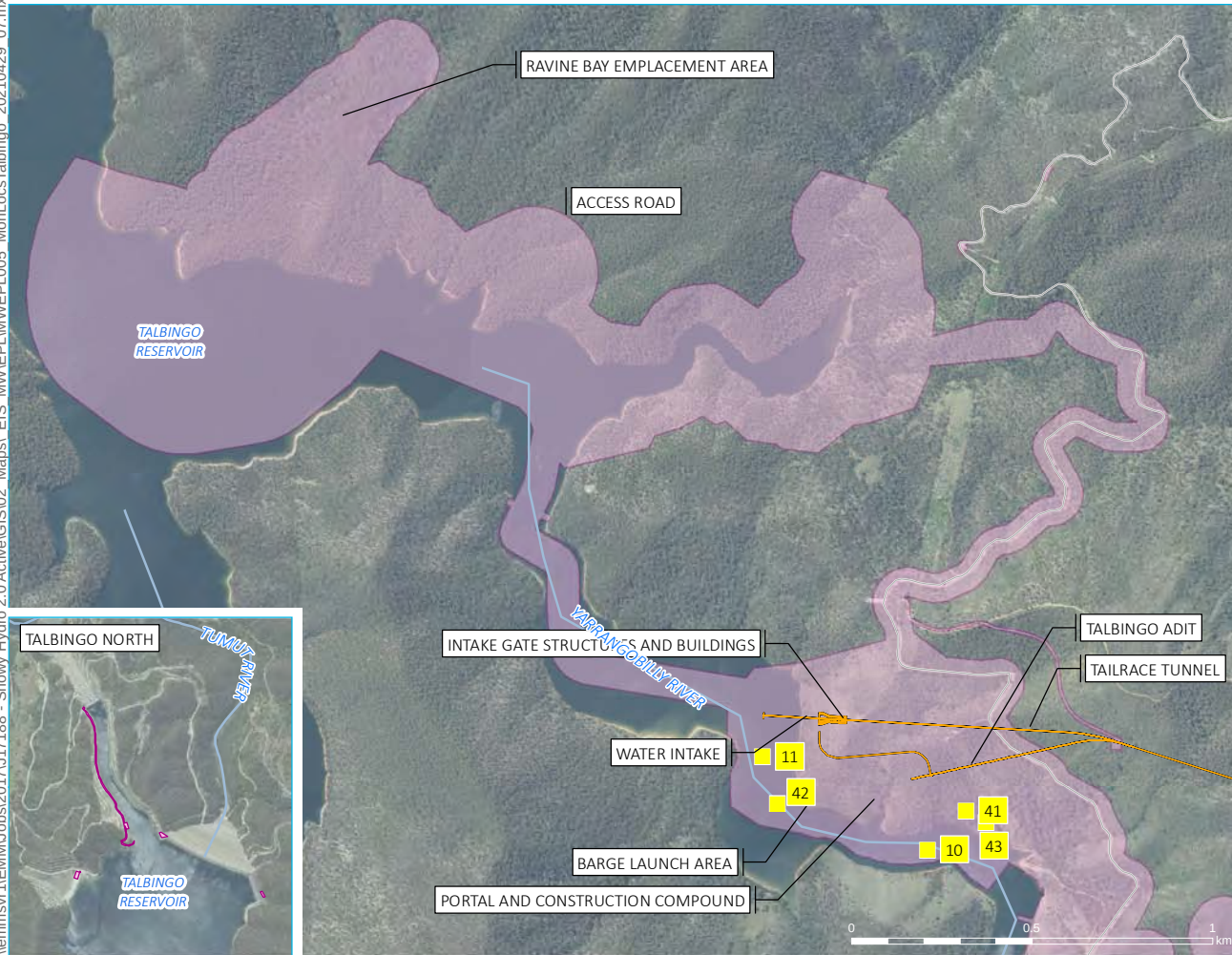
^ 90 Percentile concentration limit/100 Percentile limit

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

\\emmsvr1\EMMAJ\obs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL005 MonLocsTalbingo 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
    - Groundwater
    - Surface water
  - Existing environment
    - Main road
    - Local road
    - Watercourse
    - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
    - Tunnels, portals, intakes, shafts
    - Power station
    - Licence Premise



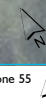
The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Talbingo Reservoir

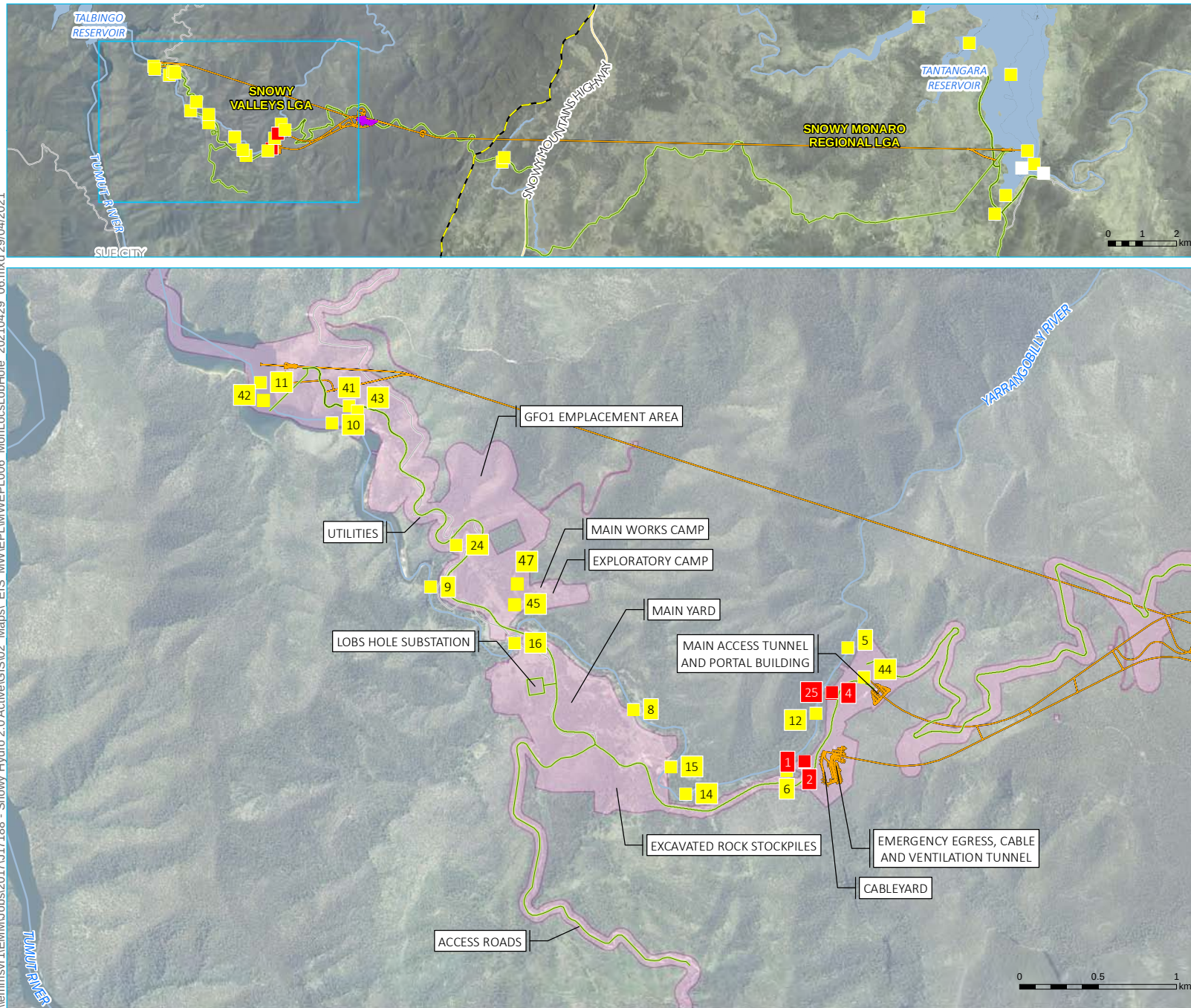
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



Snowy 2.0  
Main Works  
Figure 1

\\lemmsvr1\EMMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL006 MonLocsLobHole 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Lobs Hole

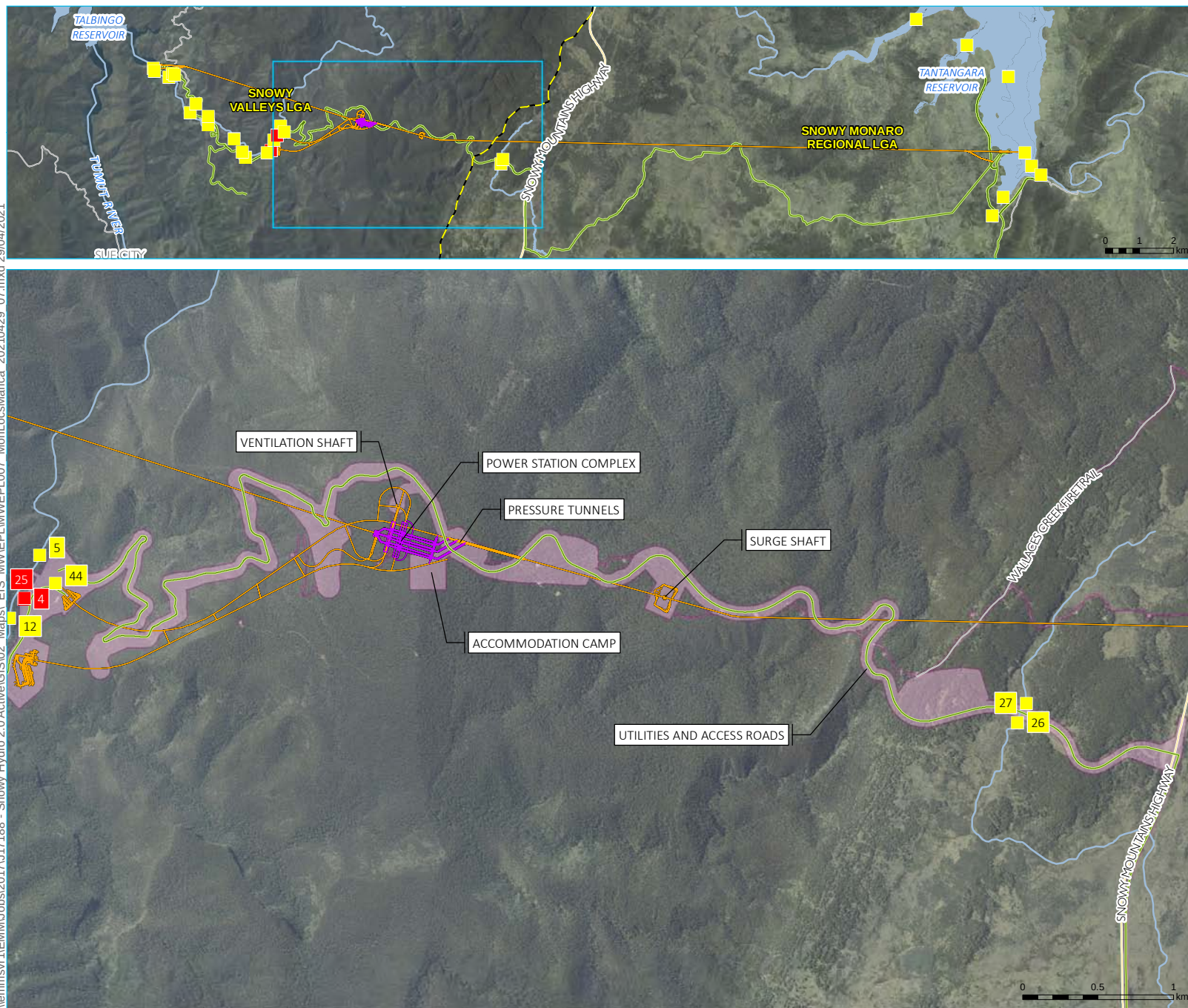
Snowy 2.0  
Main Works  
Figure 2

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MWEPL007 MonLocsMarica 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Marica

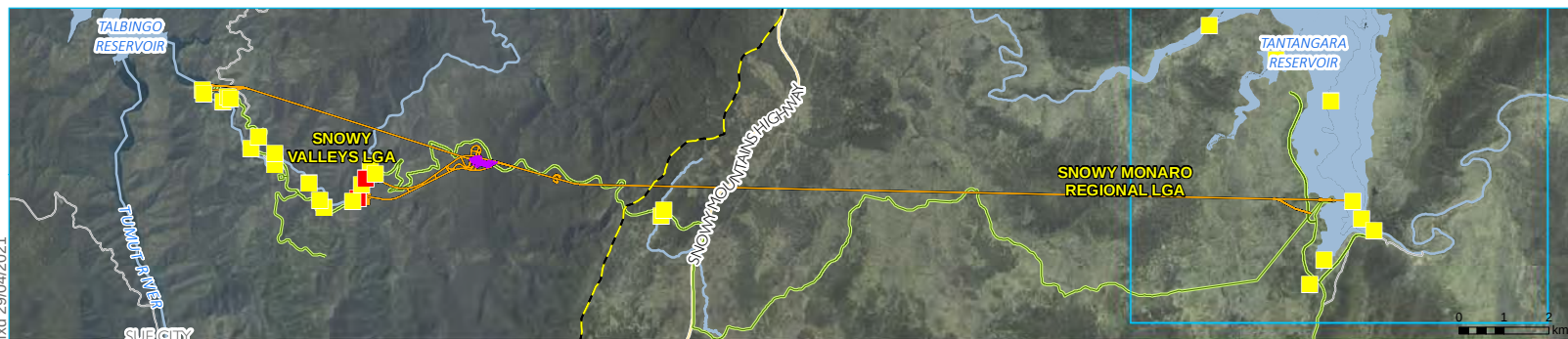
Snowy 2.0  
Main Works  
Figure 3



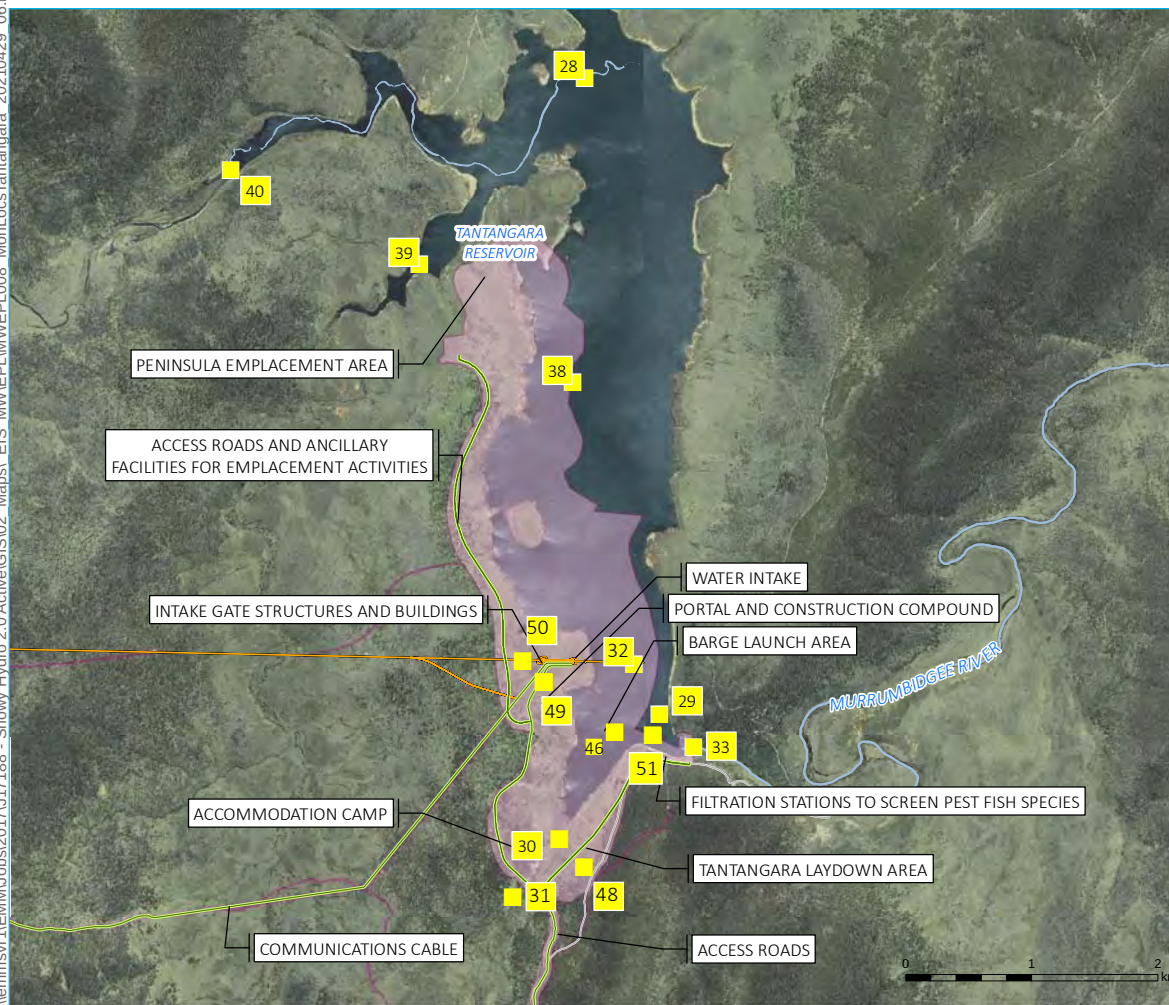
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55

\\emmsvr1\EMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL008 MonLocsTantangara 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Tantangara Reservoir

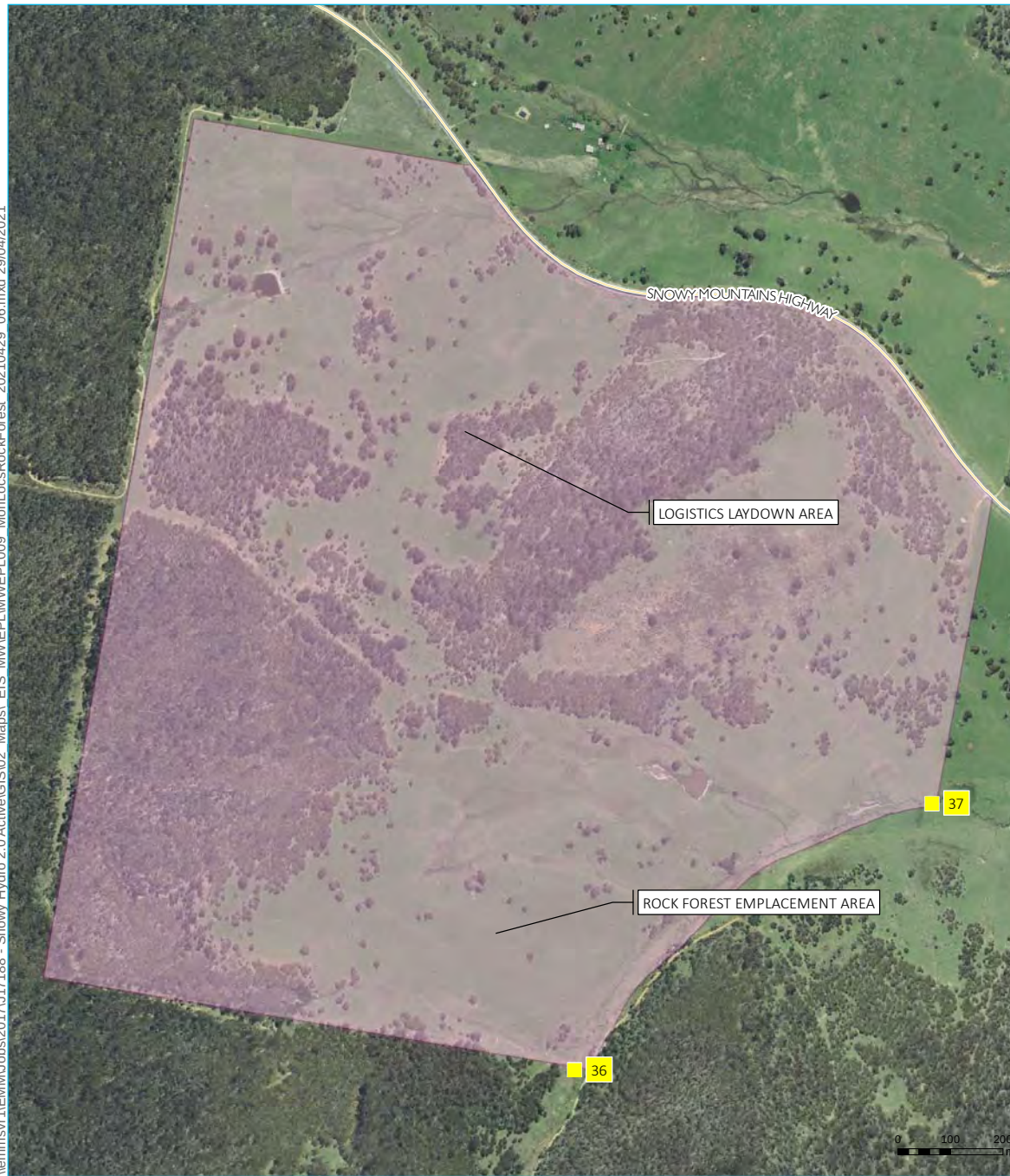
Snowy 2.0  
Main Works  
Figure 4

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\emmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL009 MonLocsRockForest 20210429 06.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)



- KEY**
- EPL monitoring point
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Rock Forest

Snowy 2.0  
Main Works  
Figure 5





### **Snowy Hydro 2.0 Main Works EPL Sampling: 01 - 30 November 2022**

|                                             |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Protection Licence No:</b> | 21266                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Licensee:</b>                            | Snowy Hydro Limited                                                                                                                                                                                                                                                                                                                                                     |
| <b>Licensee address:</b>                    | PO Box 332, Cooma, NSW 2630                                                                                                                                                                                                                                                                                                                                             |
| <b>Premises:</b>                            | Snowy 2.0 Pumped Hydro Power Station Talbingo and Tantangara, Kosciuszko National Park and Rock Forest, Kosciuszko NSW 2642                                                                                                                                                                                                                                             |
| <b>EPA Public Register:</b>                 | <a href="https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued">https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21266&amp;id=21266&amp;option=licence&amp;searchrange=licence&amp;range=POEO%20licence&amp;prp=no&amp;status=Issued</a> |

Monthly water sampling and analysis is performed as part of the Snowy 2.0 Approval Conditions, Environmental Protection Licence No 21266 - Variation 5 October 2022, and the approved Water Management Plan to ensure that works are not impacting on nearby receiving waters.

A map showing the location of each of the EPL named sampling points is provided after the results tables.

EPL sampling in Lobs Hole was completed on 5/11/2022 and 7/11/2022. EPL26 and EPL27 at Marica were sampled on 9/11/2022 and Tantangara EPL locations were sampled on 12/11/2022.

Exceedances at EPL sites are generally consistent with baseline data with an exception of select analytes at a number of sampling locations. Dissolved oxygen results that failed to reach the WQO occurred at Marica and Tantangara only, water quality meter error is believed to be the issue. Oil and grease exceedances occurred again at a number of sites in November 2022 and is being investigated further to determine the root cause. Sampling error or external laboratory issues are likely to have contributed to this rather than construction activities due to exceedances occurring across most EPL locations. Nutrients, particularly ammonia and phosphorus, exceedances are likely attributed to runoff from naturally occurring soil or plant material. The reactive phosphorus exceedance at EPL27 is likely to be attributed to offsite activities as this site is upstream of Marica Road, hence before construction inputs. The exceedances reported at EPL41 (PWTP at Talbingo) are being investigated.

The PWTP was not discharging into Talbingo or Tantangara Reservoir during the time of sampling or from this point until treatment processes had been rectified and WQO achieved.

Groundwater results are generally consistent with previous monitoring rounds. The high iron levels alongside hydrogen sulphide odours could be indicative of the potential for acid mine drainage occurring. Nutrient concentrations that exceeded WQO are likely a result of natural influence.  
Due to laboratory error, nitrogen and Kjeldahl is not available for a number of EPL samples.

The publication of this pollution monitoring data is carried out in accordance with section 66 (6) of the Protection of the Environment Operations Act 1997 (NSW).

Snowy Hydro Limited gives no warranty or representation regarding the data suitability for any particular purpose.

Snowy Hydro Limited excludes all liability to any person for loss or damage of any kind (however caused, including but not limited to by negligence) arising whether directly or indirectly from or relating in any way to the use of this data, whether in whole or in part.

Snowy Hydro 2.0 Main Works  
Monthly EPL Sampling: 11 November 2022 Groundwater

|                               |              |                    |                                  | EPL1<br>(RMSB6) | EPL2<br>(RSMB7) | EPL4<br>(RSMB9) | EPL25<br>(RSMB8) |
|-------------------------------|--------------|--------------------|----------------------------------|-----------------|-----------------|-----------------|------------------|
| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |                 |                 |                 |                  |
| Physiochemical                |              |                    |                                  |                 |                 |                 |                  |
| pH                            | pH Unit      | -                  | 6.5-8                            | 7.72            | 7.79            | 7.52            | 6.64             |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           | 965             | 177             | 999             | 394              |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value | -91             | -67             | -96             | -3               |
| Temperature                   | °C           | -                  | No Water Quality Objective Value | 19.58           | 21.97           | 17.0            | 18.7             |
| Dissolved Oxygen              | % saturation | -                  | No Water Quality Objective Value | 19.8            | 24.5            | 8.9             | 20               |
| Turbidity                     | NTU          | -                  | No Water Quality Objective Value | 302             | 621             | 278             | 1000             |
| Nutrients                     |              |                    |                                  |                 |                 |                 |                  |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              | 1,100           | 300             | 600             | 500              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               | 50              | <50             | <50             | <50              |
| Metals                        |              |                    |                                  |                 |                 |                 |                  |
| Aluminium (dissolved)         | µg/L         | 5                  | 27                               | <5              | <5              | 6               | <5               |
| Copper (dissolved)            | µg/L         | 0.5                | 1                                | <1              | <1              | <1              | <1               |
| Iron (dissolved)              | µg/L         | 2                  | 300                              | 310             | 2,600           | 740             | 6,100            |
| Lead (dissolved)              | µg/L         | 0.1                | 1                                | <1              | <1              | <1              | <1               |
| Manganese (dissolved)         | µg/L         | 0.5                | 1,200                            | 140             | 180             | 150             | 1,300            |
| Nickel (dissolved)            | µg/L         | 0.5                | 8                                | 3               | <1              | 1               | 13               |
| Silver (dissolved)            | µg/L         | 0.01               | 0.02                             | <5              | <5              | <5              | <5               |
| Zinc (dissolved)              | µg/L         | 1                  | 2.4                              | <5              | <5              | <5              | 21               |

\* 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.



Snowy Hydro 2.0 Main Works  
Monthly EPL Sampling: 01 - 30 November 2022 - Talbingo and Tantangara Reservoir

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| Field                                    |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8                            |
| Electrical Conductivity                  | µS/cm        | -                  | 20-30                            |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen                         | % saturation | -                  | 90-110                           |
| Turbidity                                | NTU          | -                  | 1-20                             |
| Laboratory analytes                      |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| Nutrients                                |              |                    |                                  |
| Ammonia as N                             | µg/L         | 5                  | 10                               |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | 5                                |
| Phosphorus (Total)                       | µg/L         | 5                  | 10                               |
| Inorganics                               |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | 7                                |
| Hydrocarbons                             |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 5                                |
| Metals                                   |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| Biological                               |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biochemical Oxygen Demand                | mg/L         | 2                  | 1/5^                             |

| EPL10 | EPL11 | EPL28 | EPL29 | EPL32 | EPL38  | EPL39 | EPL40 | EPL46 | EPL51 |
|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
|       |       |       |       |       |        |       |       |       |       |
| 7.6   | 7.9   | 7.6   | 7.5   | 7.5   | 7.6    | 6.8   | 7.3   | 7.25  | 7.3   |
| 42    | 44    | 16.9  | 17.9  | 17.4  | 16.9   | 15.5  | 17.3  | 17.7  | 17.8  |
| -60   | -73   | -50   | -62.6 | -82   | -116.5 | -6    | -31.5 | -87   | -85.1 |
| 15.82 | 15.73 | 15.6  | 17.6  | 16.5  | 15.7   | 15.4  | 14.7  | 16.9  | 17.3  |
| 99.6  | 107.5 | 93.8  | 92.9  | 94.9  | 93.5   | 90.7  | 88.3  | 93.5  | 95.2  |
| 18.9  | 48    | 7     | 2.3   | 2     | 2      | 2.4   | 1.7   | 1.76  | 2     |
|       |       |       |       |       |        |       |       |       |       |
| 9.1   | <5    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    |
| 15    | 20    | 5.1   | 8.9   | 7.4   | 7.4    | 6.6   | 7.6   | 7.1   | <5    |
|       |       |       |       |       |        |       |       |       |       |
| 11    | <5    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    |
| -     | -     | 100   | 100   | 100   | 100    | 100   | 100   | 100   | 200   |
| -     | -     | 100   | 100   | 100   | 100    | 100   | 100   | 100   | 200   |
| <1    | <1    | 16    | 3     | 4     | <1     | <1    | <1    | 10    | 10    |
| 14    | 25    | 8     | 10    | 10    | 12     | 9     | 9     | 9     | <5    |
|       |       |       |       |       |        |       |       |       |       |
| <4    | <4    | <4    | <4    | <4    | <4     | <4    | <4    | <4    | <4    |
|       |       |       |       |       |        |       |       |       |       |
| 24    | 22    | 7.9   | 8.6   | <5    | <5     | 18    | 8     | 8.1   | 13    |
|       |       |       |       |       |        |       |       |       |       |
| 9     | 9     | 21    | 18    | 28    | 27     | 18    | 10    | 23    | 17    |
| <1    | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    |       |
| <1    | <1    | 2     | 2     | 1     | <1     | <1    | <1    | <1    | 1     |
| 4     | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    |       |
| <50   | <50   | 80    | 50    | 50    | 60     | 60    | 50    | 50    | 70    |
| <1    | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    |
| <1    | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    |
| 7     | <5    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    |
|       |       |       |       |       |        |       |       |       |       |
| <1    | <1    | <1    | -     | -     | -      | -     | -     | -     | <1    |
| <5    | <5    | <5    | -     | -     | -      | -     | -     | -     | <5    |

\* 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 / ARMICANZ (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 November 2022- Surface Water**

| Analyte                       | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|-------------------------------|--------------|--------------------|----------------------------------|
| Field                         |              |                    |                                  |
| pH                            | -            | -                  | 6.5-8                            |
| Electrical Conductivity       | µS/cm        | -                  | 30-350                           |
| Oxidation Reduction Potential | mV           | -                  | No Water Quality Objective Value |
| Temperature                   | °C           | -                  | No Water Quality Objective Value |
| Dissolved Oxygen              | % saturation | -                  | 90-110                           |
| Turbidity                     | NTU          | -                  | 2-25                             |
| Laboratory analytes           |              |                    |                                  |
| TSS                           | mg/L         | 5                  | No Water Quality Objective Value |
| Hardness as CaCO3             | mg/L         | 1                  | No Water Quality Objective Value |
| Nutrients                     |              |                    |                                  |
| Ammonia as N                  | µg/L         | 5                  | 13                               |
| Kjeldahl Nitrogen Total       | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)              | µg/L         | 10                 | 250                              |
| Reactive Phosphorus           | µg/L         | 1                  | 15                               |
| Phosphorus (Total)            | µg/L         | 5                  | 20                               |
| Inorganics                    |              |                    |                                  |
| Cyanide Total                 | µg/L         | 4                  | 4                                |
| Hydrocarbons                  |              |                    |                                  |
| Oil and Grease                | mg/L         | 5                  | 5                                |
| Metals                        |              |                    |                                  |
| Aluminium (dissolved)         | µg/L         | 5                  | 27                               |
| Arsenic (dissolved)           | µg/L         | 1                  | 0.8                              |
| Chromium (III+VI) (dissolved) | µg/L         | 1                  | 0.01                             |
| Copper (dissolved)            | µg/L         | 1                  | 1                                |
| Iron (dissolved)              | µg/L         | 50                 | 300                              |
| Lead (dissolved)              | µg/L         | 1                  | 1                                |
| Manganese (dissolved)         | µg/L         | 5                  | 1,200                            |
| Nickel (dissolved)            | µg/L         | 1                  | 8                                |
| Silver (dissolved)            | µg/L         | 5                  | 0.02                             |
| Zinc (dissolved)              | µg/L         | 5                  | 2.4                              |

| EPL5  | EPL6  | EPL8  | EPL9  | EPL12 | EPL14 | EPL15 | EPL16 | EPL24 | EPL26 | EPL27 | EPL30  | EPL31 | EPL33 | EPL34 | EPL35 | EPL36 | EPL37 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| 6.9   | 6.96  | 7.65  | 7.21  | 6.88  | 7.56  | 7.56  | 7.4   | 7.0   | 6.0   | 6.1   | 7.4    | 7.2   | 6.1   | 6.6   | 6.9   | 6.2   | 6.5   |
| 48.0  | 60.0  | 62.0  | 57.0  | 50.0  | 72.0  | 54.0  | 54.0  | 57.0  | 14.5  | 14.6  | 19.6   | 16.8  | 18.5  | 10.8  | 11.9  | 26.4  | 32.5  |
| 177   | -23   | -60   | 144   | -18   | 167   | 174   | -44.0 | 77.0  | 207.4 | 183.3 | -100.2 | -93.3 | 245.2 | 60.7  | 137.2 | 204.1 | 173.4 |
| 12.15 | 13.95 | 11.24 | 10.43 | 12.23 | 10.11 | 10.18 | 13.3  | 11.3  | 7.2   | 7.3   | 13.1   | 12.8  | 16.2  | 12.3  | 13.1  | 12.4  | 14.2  |
| 91    | 94.4  | 94    | 103   | 92.3  | 100   | 94.3  | 94.9  | 96.8  | 67.3  | 68.5  | 51.9   | 78.9  | 69.9  | 80.4  | 72.4  | 64.1  | 66.4  |
| 16.7  | 24.5  | 23.6  | 18.1  | 13.7  | 17.3  | 18.1  | 26.2  | 16.5  | 4.7   | 10.2  | 17.6   | 7.8   | 7.6   | 2.5   | 2.5   | 2.6   | 3.0   |
| <5    | 11    | <5    | 24    | 7.2   | <5    | 5.6   | 7.3   | 6.0   | <5    | 18    | 15     | 12    | <5    | <5    | <5    | <5    | <5    |
| 28    | 35    | 36    | 35    | 29    | 43    | 31    | 30    | 35.0  | 12    | 12    | 8.2    | 8.3   | 9.6   | 5.6   | 5.8   | 17    | 17    |
| <5    | 32    | 39    | <5    | 24    | <5    | <5    | 47    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    | <5    | <5    |
| <100  | -     | -     | -     | <100  | -     | <100  | <100  | -     | <100  | <100  | 100    | 200   | -     | -     | 100   | 200   | 200   |
| <100  | <100  | -     | -     | <100  | -     | <100  | <100  | -     | <100  | <100  | 100    | 200   | -     | -     | 100   | 200   | 200   |
| 5     | 11    | 5     | 7     | 4     | 7     | 7     | 7     | 5     | 2     | 98    | 1      | 1     | 2     | <1    | 6     | 8     | <1    |
| 70    | 19    | 11    | 14    | 73    | 18    | 26    | 8     | 5     | <5    | 31    | 40     | 17    | 9     | 5     | 6     | <5    | 17    |
| 4     | <4    | <4    | <4    | <4    | <4    | 8     | <4    | <4    | <4    | <4    | <4     | <4    | <4    | <4    | <4    | <4    | <4    |
| 5     | 13    | 14    | 18    | 24    | 8.3   | 21    | 15    | 28    | 16    | 16    | 14     | 11    | 9.4   | 9.3   | 21    | 19    | 14    |
| 19    | 10    | 5     | 16    | 30    | 9     | 41    | 27    | 35    | <5    | <5    | 21     | 31    | <5    | 27    | 5     | 25    | 15    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    | <1    | <1    | <1    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | 1     | <1    | 2      | 1     | <1    | 1     | <1    | <1    | 1     |
| <1    | <1    | <1    | <1    | <1    | 2     | <1    | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    | <1    | <1    | <1    |
| <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | <50   | 70     | 70    | 90    | 70    | 70    | 140   | 140   |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | 39    | <5    | <5    | <5     | <5    | <5    | <5    | <5    | <5    | <5    |
| <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1    | <1     | <1    | <1    | <1    | <1    | <1    | <1    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    | <5    | <5    |
| <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5    | <5     | <5    | <5    | <5    | <5    | <5    | <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.

**Snowy Hydro 2.0 Main Works**  
**Monthly EPL Sampling: 01 - 30 November 2022 - Treated Water**

| Analyte                                  | Unit         | Limit of Reporting | Water Quality Objective Value*   |
|------------------------------------------|--------------|--------------------|----------------------------------|
| <b>Flow Rate</b>                         |              |                    |                                  |
| Inflow <sup>#</sup>                      | ML/day       |                    |                                  |
| Outflow <sup>#</sup>                     | ML/day       |                    | 4.32 (EPL 43 / 50)               |
| <b>Field</b>                             |              |                    |                                  |
| pH                                       | pH Unit      | -                  | 6.5-8.5                          |
| Electrical Conductivity                  | µS/cm        | -                  | 700 (EPL 41) / 200 (EPL 50)      |
| Oxidation Reduction Potential            | mV           | -                  | No Water Quality Objective Value |
| Temperature                              | °C           | -                  | 15                               |
| Dissolved Oxygen                         | % saturation | -                  | No Water Quality Objective Value |
| Turbidity                                | NTU          | -                  | <25                              |
| <b>Laboratory analytes</b>               |              |                    |                                  |
| Total suspended solids                   | mg/L         | 5                  | 5/10                             |
| Hardness as CaCO <sub>3</sub> (filtered) | mg/L         | 1                  | No Water Quality Objective Value |
| <b>Nutrients</b>                         |              |                    |                                  |
| Ammonia as N                             | µg/L         | 5                  | 0.2/2^                           |
| Kjeldahl Nitrogen Total                  | µg/L         | 10                 | No Water Quality Objective Value |
| Nitrogen (Total)                         | µg/L         | 10                 | 350                              |
| Reactive Phosphorus                      | µg/L         | 1                  | No Water Quality Objective Value |
| Phosphorus (Total)                       | µg/L         | 5                  | 0.1/0.3^                         |
| <b>Inorganics</b>                        |              |                    |                                  |
| Cyanide Total                            | µg/L         | 4                  | No Water Quality Objective Value |
| <b>Hydrocarbons</b>                      |              |                    |                                  |
| Oil and Grease                           | mg/L         | 5                  | 2/5^                             |
| <b>Metals</b>                            |              |                    |                                  |
| Aluminium (dissolved)                    | µg/L         | 5                  | 55                               |
| Arsenic (dissolved)                      | µg/L         | 0.2                | 13                               |
| Chromium (III+VI) (dissolved)            | µg/L         | 0.2                | 1                                |
| Copper (dissolved)                       | µg/L         | 0.5                | 14                               |
| Iron (dissolved)                         | µg/L         | 2                  | 300                              |
| Lead (dissolved)                         | µg/L         | 0.1                | 3.4                              |
| Manganese (dissolved)                    | µg/L         | 0.5                | 1,900                            |
| Nickel (dissolved)                       | µg/L         | 0.5                | 11                               |
| Silver (dissolved)                       | µg/L         | 0.01               | 0.05                             |
| Zinc (dissolved)                         | µg/L         | 1                  | 8                                |
| <b>Biological</b>                        |              |                    |                                  |
| Faecal Coliforms                         | CFU/100mL    | 1                  | 10/100^                          |
| Biological Oxygen Demand                 | mg/L         |                    | 5                                |

| EPL 41 | EPL 43 | EPL 44 | EPL 45 | EPL 47 | EPL 48 | EPL 49 | EPL 50 |
|--------|--------|--------|--------|--------|--------|--------|--------|
|        |        |        |        |        |        |        |        |
| -      | -      | 0.492  | 0.041  | 0.090  | 0.059  | 0.049  | -      |
| -      | 0.167  | -      | -      | -      | -      | -      | -      |
|        |        |        |        |        |        |        |        |
| 9.55   | -      | -      | -      | -      | -      | -      | 7.4    |
| 95.8   | -      | -      | -      | -      | -      | -      | 9      |
| 161    | -      | -      | -      | -      | -      | -      | -126.9 |
| 15.34  | -      | -      | -      | -      | -      | -      | 15.4   |
| 68.8   | -      | -      | -      | -      | -      | -      | 42.1   |
| 1000   | -      | -      | -      | -      | -      | -      | 0      |
|        |        |        |        |        |        |        |        |
| 320    | -      | -      | -      | -      | -      | -      | <5     |
| 9.6    | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| 330    | -      | -      | -      | -      | -      | -      | <5     |
| 1100   | -      | -      | -      | -      | -      | -      | <100   |
| 1600   | -      | -      | -      | -      | -      | -      | 400    |
| 18     | -      | -      | -      | -      | -      | -      | 6      |
| 430    | -      | -      | -      | -      | -      | -      | 20     |
|        |        |        |        |        |        |        |        |
| 6      | -      | -      | -      | -      | -      | -      | <4     |
|        |        |        |        |        |        |        |        |
| 15     | -      | -      | -      | -      | -      | -      | 19     |
|        |        |        |        |        |        |        |        |
| 1600   | -      | -      | -      | -      | -      | -      | <5     |
| 11     | -      | -      | -      | -      | -      | -      | <1     |
| 180    | -      | -      | -      | -      | -      | -      | <1     |
| 2      | -      | -      | -      | -      | -      | -      | <1     |
| <50    | -      | -      | -      | -      | -      | -      | <50    |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |
|        |        |        |        |        |        |        |        |
| <1     | -      | -      | -      | -      | -      | -      | <1     |
| <5     | -      | -      | -      | -      | -      | -      | <5     |

Note: Treated water was not being discharged at Talbingo and Tantangara Reservoirs at the time of EPL sampling

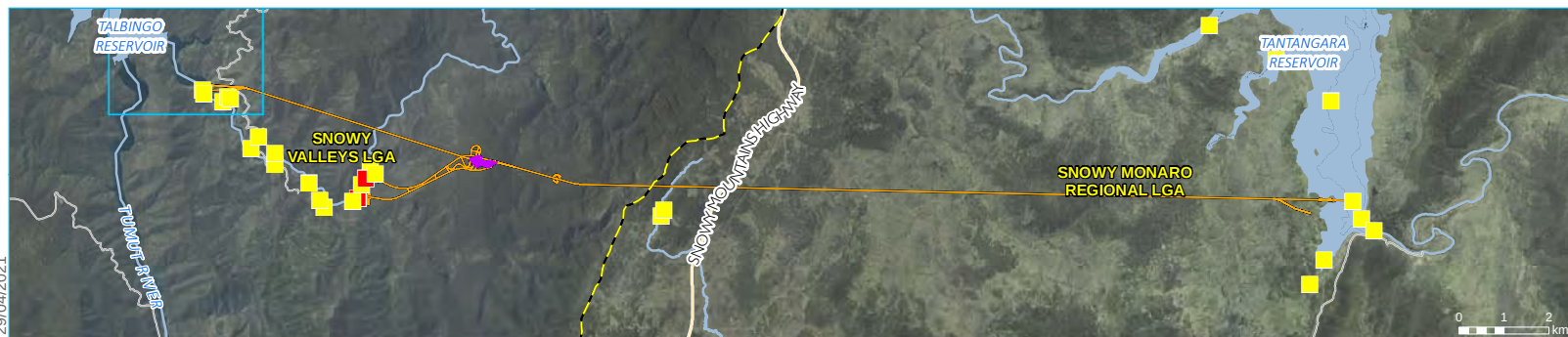
\* Water Quality Objective values Treated Water reference the predicted values for physical and chemical stressors from the treatment plant as presented in the Main Works EIS.

- Samples not required

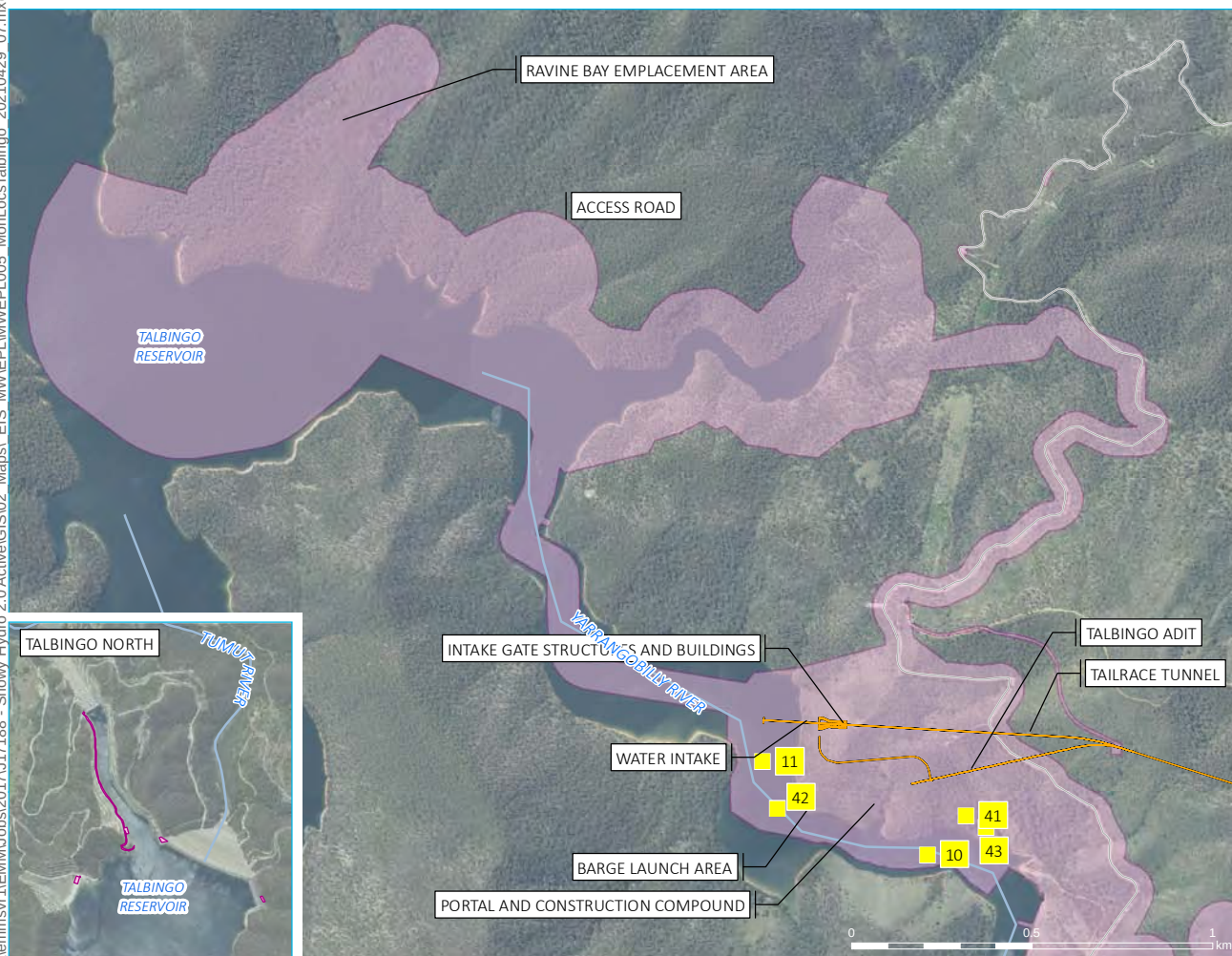
^ 90 Percentile concentration limit/100 Percentile limit

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

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- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

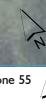
Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Talbingo Reservoir

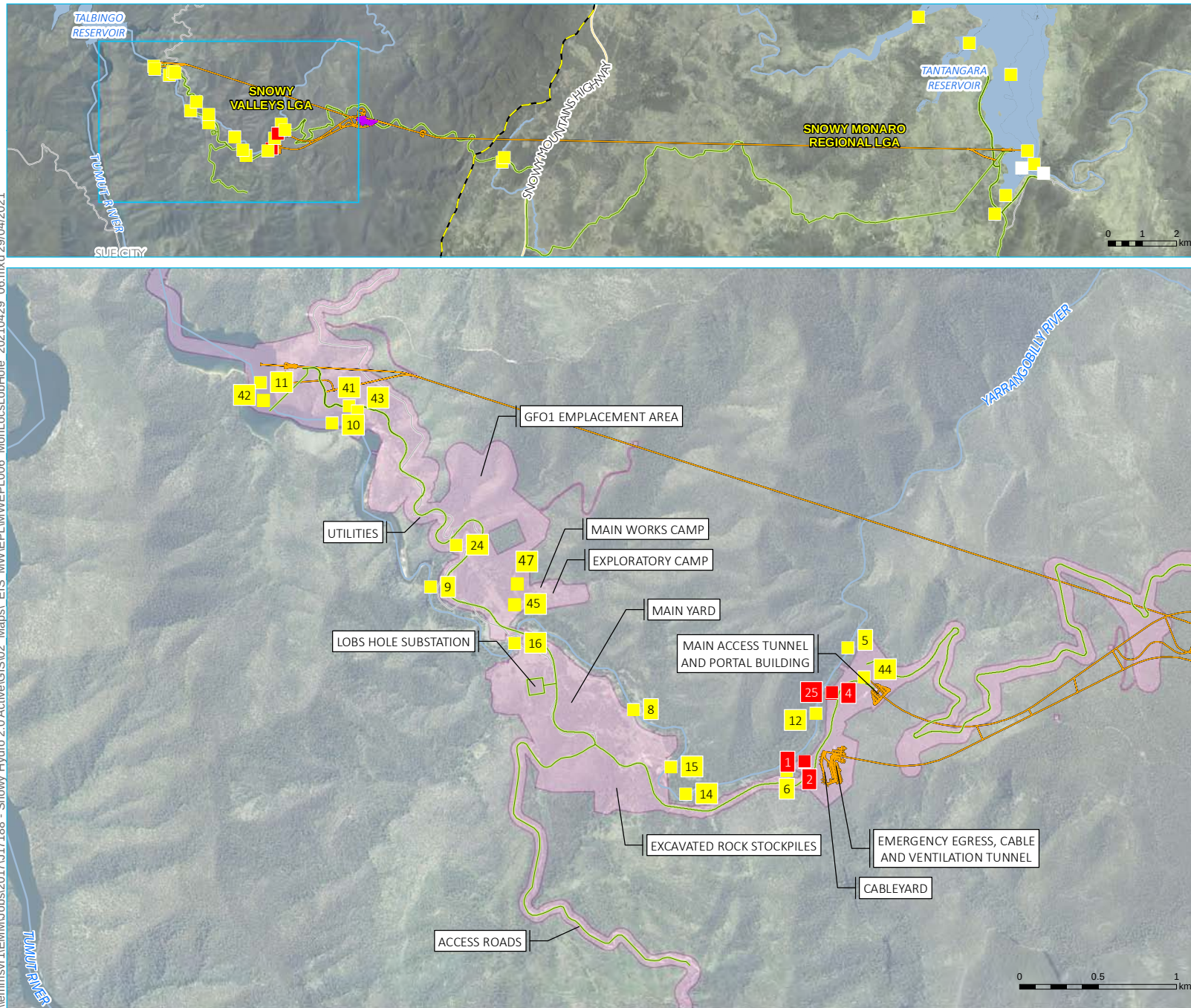
Snowy 2.0  
Main Works  
Figure 1

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

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\\lemmsvr1\EMMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL006 MonLocsLobHole 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Lobs Hole

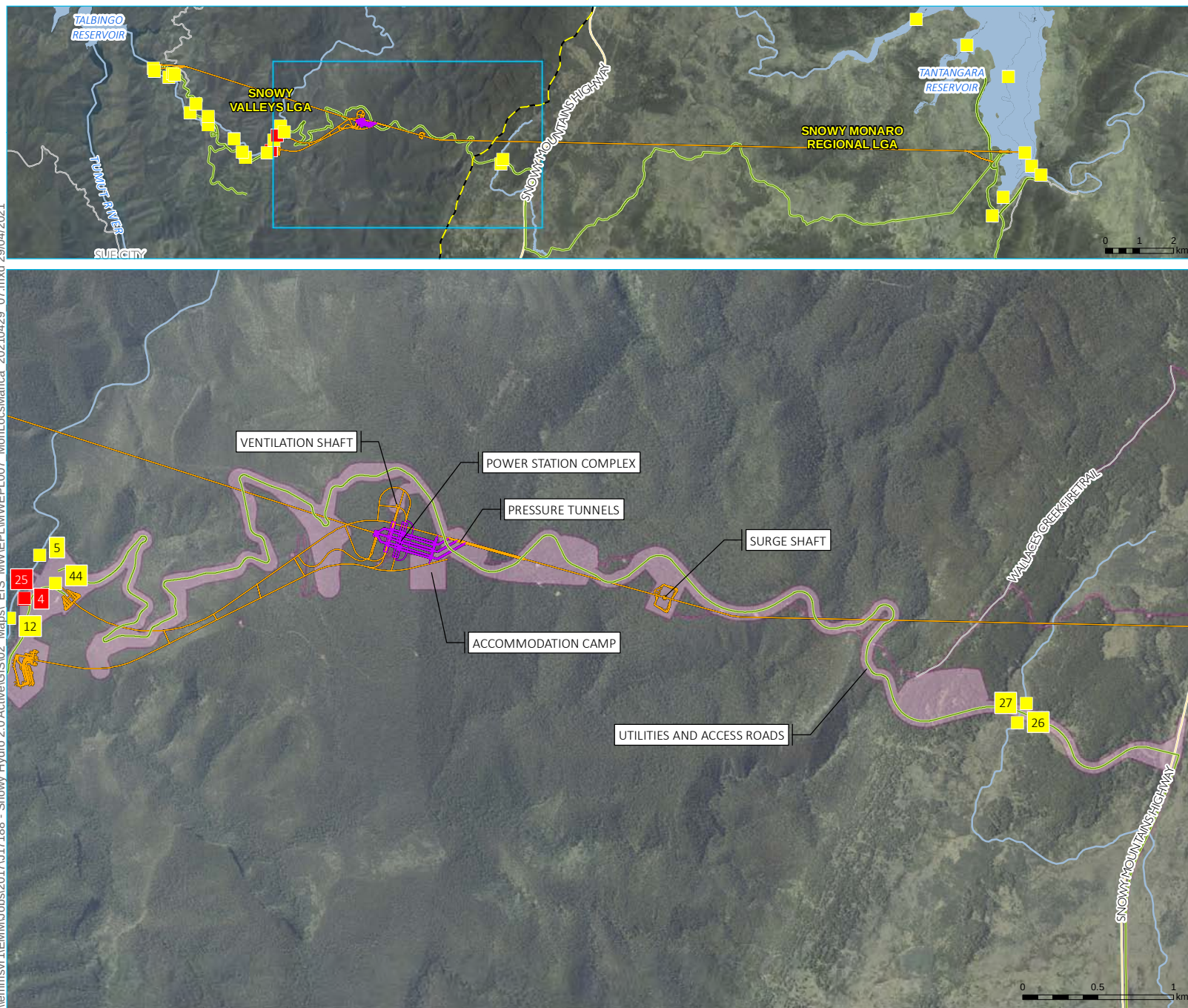
Snowy 2.0  
Main Works  
Figure 2

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

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\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL007 MonLocsMarica 20210429 07.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Marica

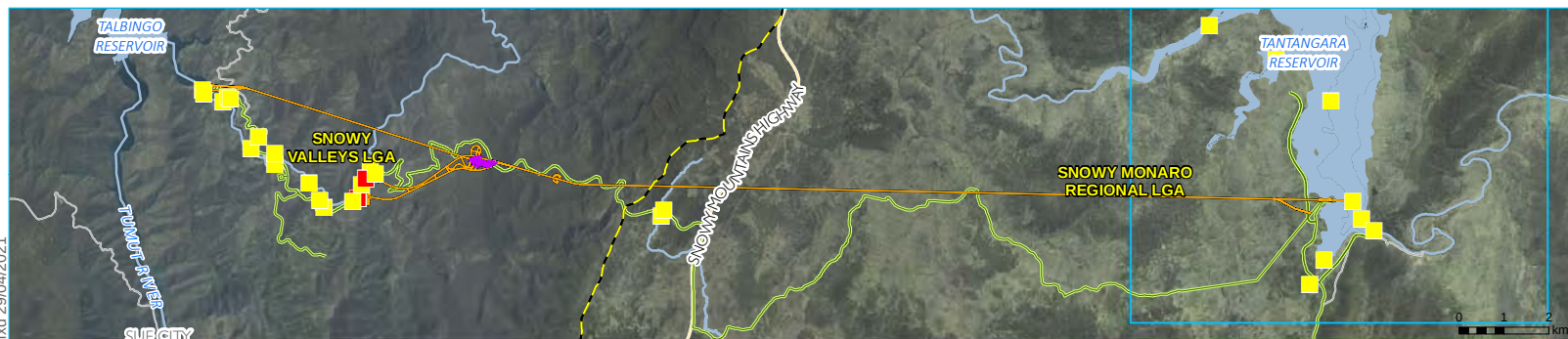
Snowy 2.0  
Main Works  
Figure 3



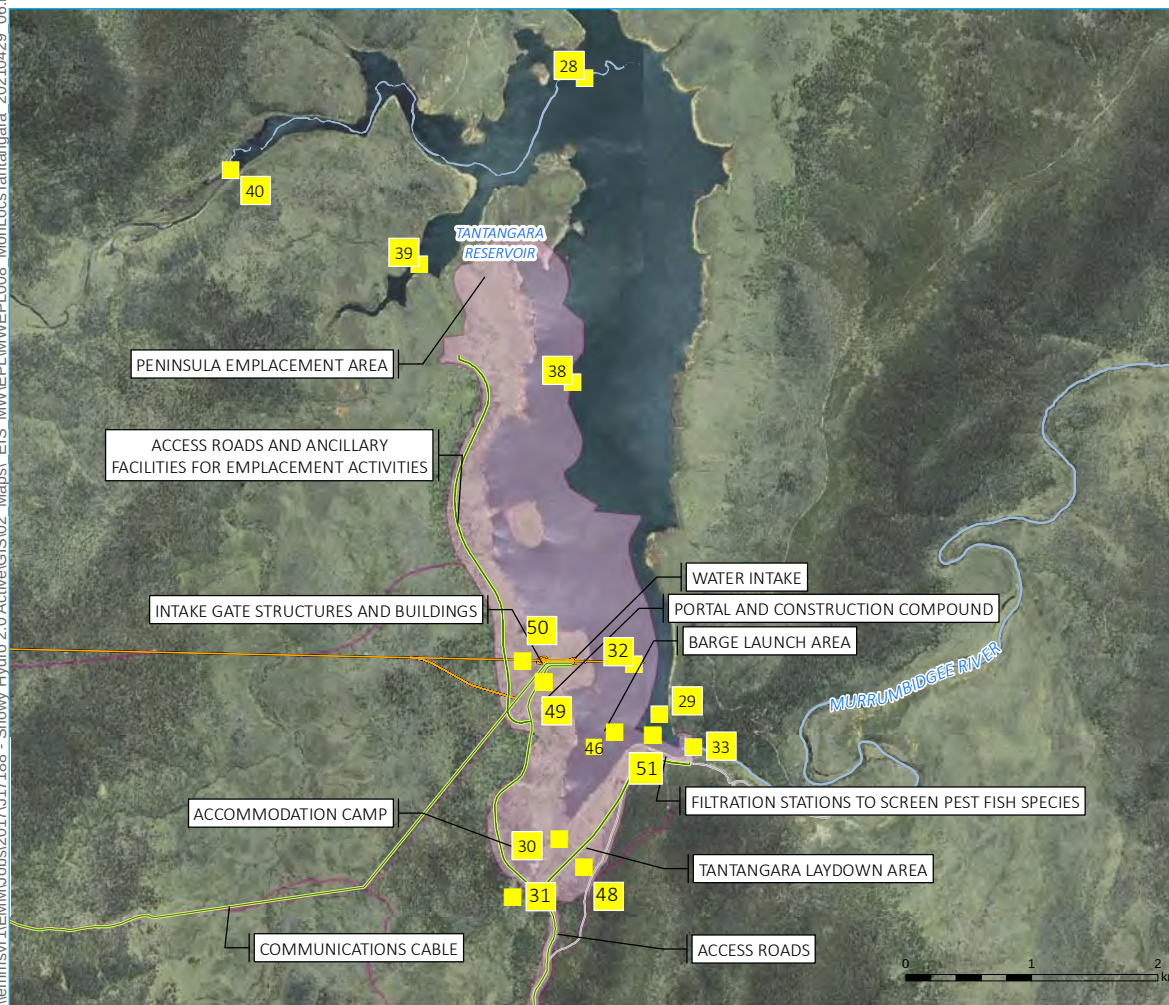
Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55

\\emmsvr1\EMM\Jobs\2017\17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL008 MonLocsTantangara 20210429 06.mxd 29/04/2021



- KEY**
- EPL monitoring point
  - Groundwater
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Waterbodies
  - Local government area boundary
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Power station
  - Utilities
  - Licence Premise



The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

### EPL Premise and monitoring point maps - Tantangara Reservoir

Snowy 2.0  
Main Works  
Figure 4

Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

GDA 1994 MGA Zone 55



\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MW\EPL\MW\EPL009 MonLocsRockForest\_20210429\_06.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)



- KEY**
- EPL monitoring point
  - Surface water
  - Existing environment
  - Main road
  - Local road
  - Watercourse
  - Snowy 2.0 Main Works operational elements
  - Tunnels, portals, intakes, shafts
  - Utilities
  - Licence Premise

The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Rock Forest

Snowy 2.0  
Main Works  
Figure 5



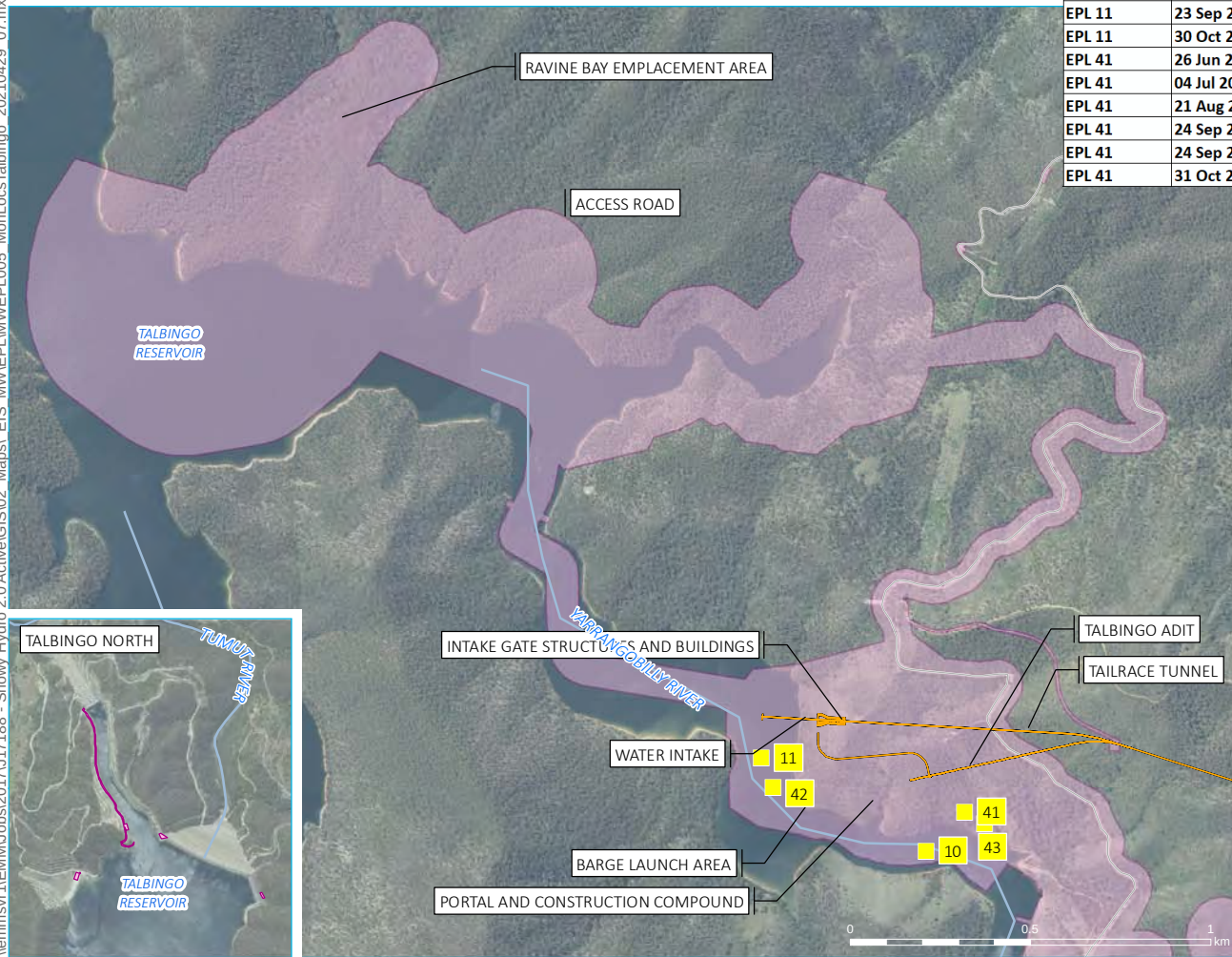
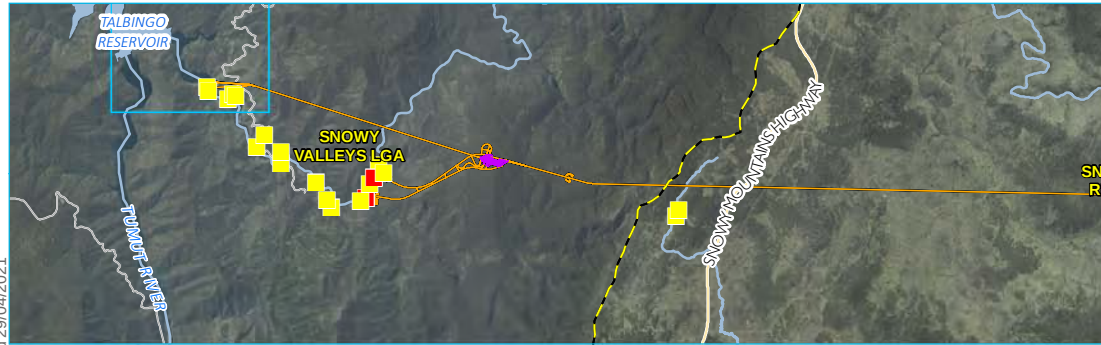
GDA 1994 MGA Zone 55





## APPENDIX D – EXCEEDANCE MAP

\\lemmsvr1\EMMAJ\obs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL005 MonLocsTalbingo 20210429 07.mxd 29/04/2021



|                                      | Nitrite + Nitrate as N | Cyanide Total | Nitrogen (Total) | Aluminium (filtered) | Arsenic (filtered) | Chromium (III+VI) (filtered) | Copper (filtered) | Iron (filtered) | Lead (filtered) | Zinc (filtered) |
|--------------------------------------|------------------------|---------------|------------------|----------------------|--------------------|------------------------------|-------------------|-----------------|-----------------|-----------------|
|                                      | mg/L                   | mg/L          | mg/L             | mg/L                 | mg/L               | mg/L                         | mg/L              | mg/L            | mg/L            | mg/L            |
| EQL                                  | 0.002                  | 0.004         | 0.01             | 0.005                | 0.001              | 0.001                        | 0.001             | 0.05            | 0.001           | 0.005           |
| Snowy 2.0 - Surface Water Guidelines | 0.02                   | 0.004         | 0.25             | 0.027                | 0.0008             | 0.00001                      | 0.001             | 0.3             | 0.001           | 0.0024          |
| Field ID                             | Date                   |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 10                               | 03 Jul 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 10                               | 0.05                   | <0.004        | 0.06             | <0.005               | <0.001             | <0.001                       | <0.001            | <0.05           | <0.001          | <0.005          |
| EPL 10                               | 21 Aug 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 10                               | 0.03                   | 0.005         | 0.10             | <0.005               | <0.001             | <0.001                       | <0.001            | <0.05           | <0.001          | <0.005          |
| EPL 10                               | 30 Oct 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 10                               | <0.01                  | <0.004        | 0.10             | 0.017                | <0.001             | 0.001                        | <0.001            | <0.05           | <0.001          | 0.007           |
| EPL 11                               | 03 Jul 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 11                               | 0.05                   | <0.004        | 0.08             | 0.006                | <0.001             | <0.001                       | <0.001            | <0.05           | <0.001          | <0.005          |
| EPL 11                               | 21 Aug 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 11                               | 0.02                   | <0.004        | 0.63             | 0.005                | <0.001             | <0.001                       | 0.003             | <0.05           | <0.001          | <0.005          |
| EPL 11                               | 23 Sep 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 11                               | 0.01                   | <0.004        | 0.32             | 0.008                | <0.001             | <0.001                       | <0.001            | <0.05           | <0.001          | <0.005          |
| EPL 11                               | 23 Sep 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 11                               | 0.01                   | <0.004        | 0.32             | 0.008                | <0.001             | <0.001                       | <0.001            | <0.05           | <0.001          | <0.005          |
| EPL 11                               | 30 Oct 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 11                               | <0.01                  | 0.004         | 0.05             | 0.014                | <0.001             | <0.001                       | 0.003             | <0.05           | <0.001          | <0.005          |
| EPL 41                               | 26 Jun 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 41                               | 0.47                   | 0.010         | 2.1              | 0.25                 | <0.001             | 0.073                        | 0.010             | <0.05           | <0.001          | 0.039           |
| EPL 41                               | 04 Jul 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 41                               | 0.31                   | 0.022         | 0.32             | 0.39                 | <0.001             | 0.28                         | 0.076             | <0.05           | 0.003           | 0.25            |
| EPL 41                               | 21 Aug 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 41                               | 0.19                   | 0.005         | 0.81             | 1.5                  | <0.001             | 0.10                         | 0.003             | 0.06            | <0.001          | <0.005          |
| EPL 41                               | 24 Sep 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 41                               | 0.04                   | 0.008         | 0.31             | 3.9                  | 0.005              | 0.40                         | 0.006             | 0.83            | <0.001          | <0.005          |
| EPL 41                               | 24 Sep 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 41                               | 0.04                   | 0.008         | 0.31             | 3.9                  | 0.005              | 0.40                         | 0.006             | 0.83            | <0.001          | <0.005          |
| EPL 41                               | 31 Oct 2022            |               |                  |                      |                    |                              |                   |                 |                 |                 |
| EPL 41                               | 0.15                   | <0.004        | 25               | 0.11                 | 0.001              | 0.048                        | 0.004             | <0.05           | <0.001          | <0.005          |

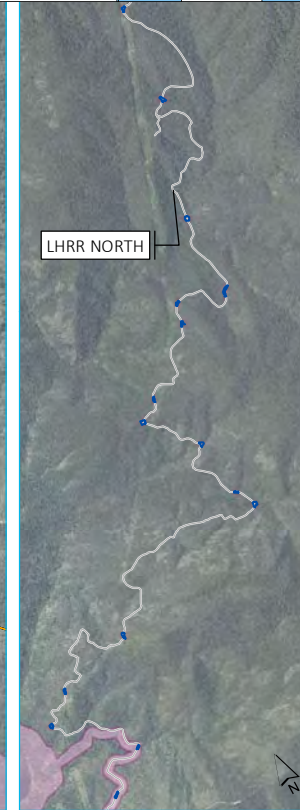


Figure 1 - EPL Exceedance Reservoir Water

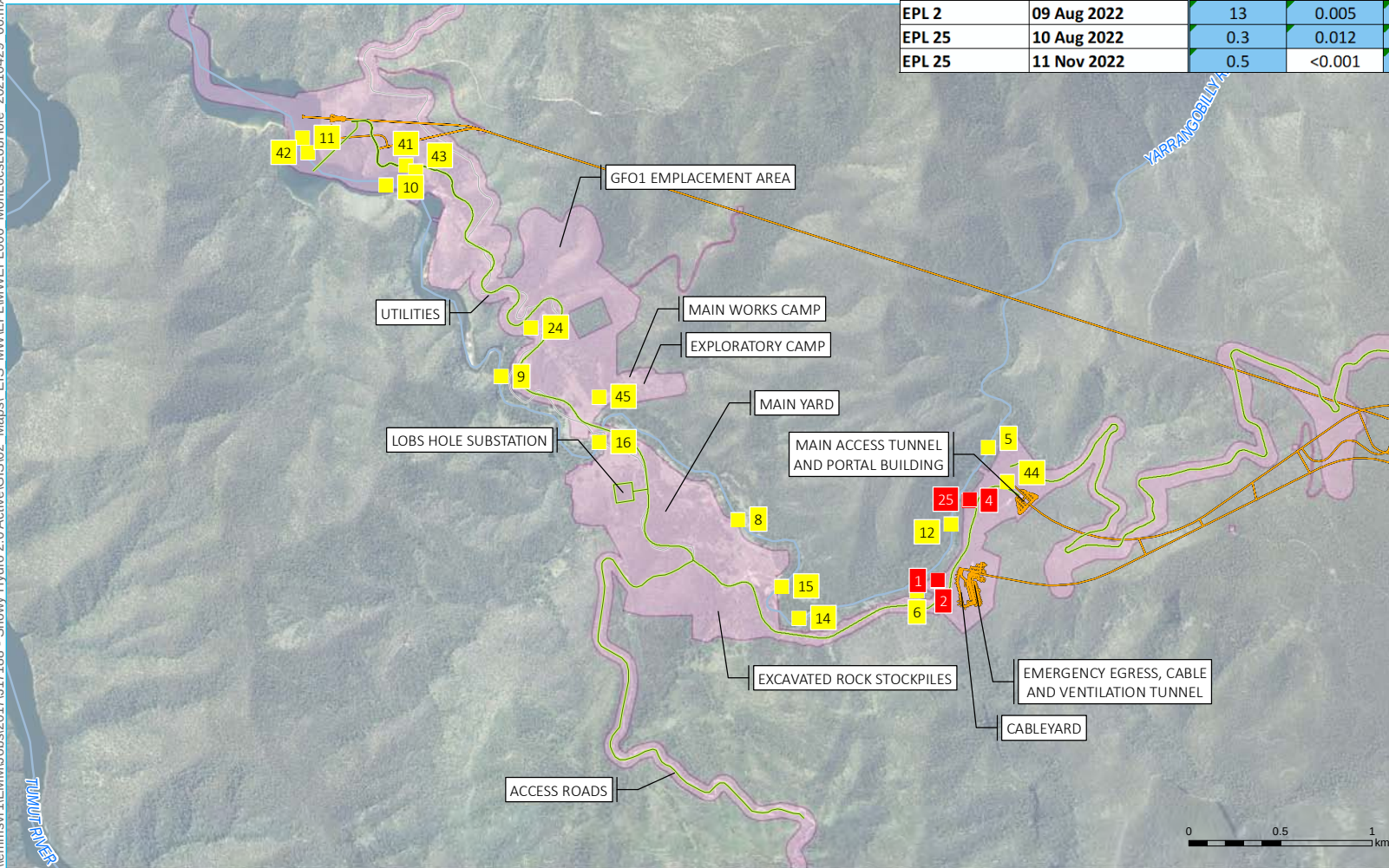
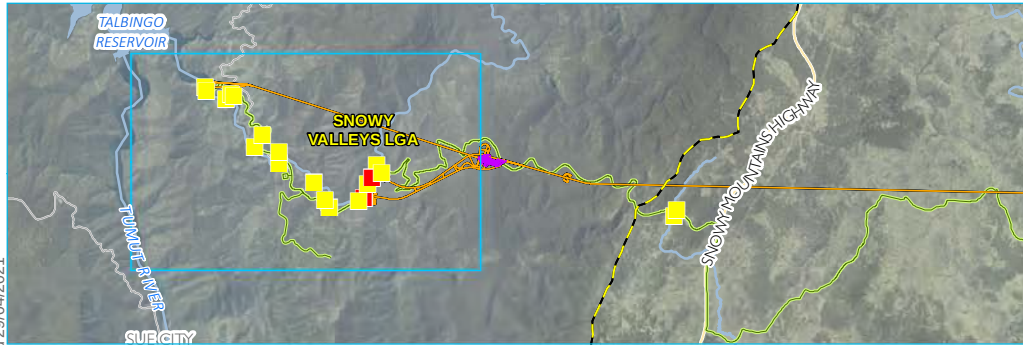
snowyhydro



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

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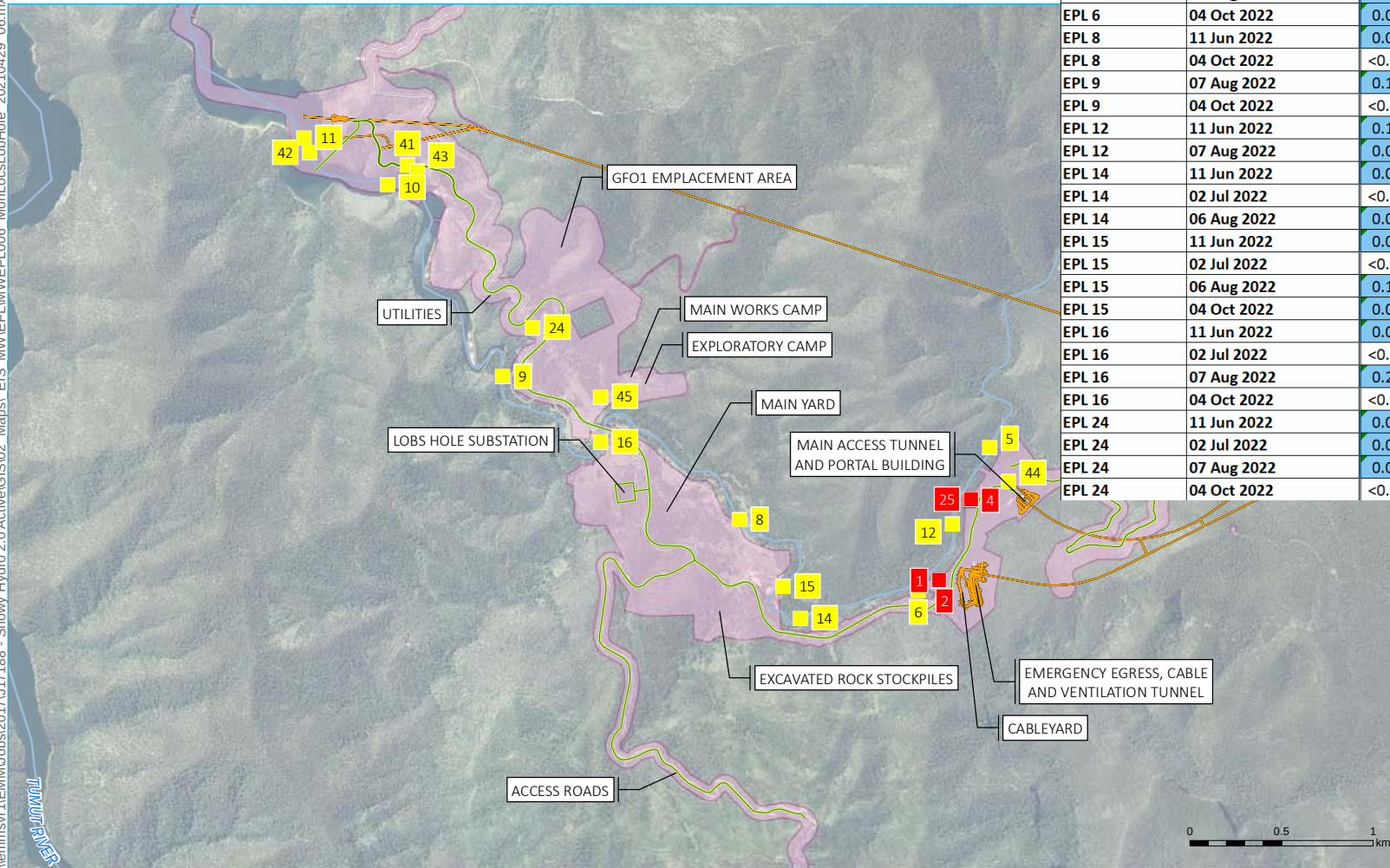
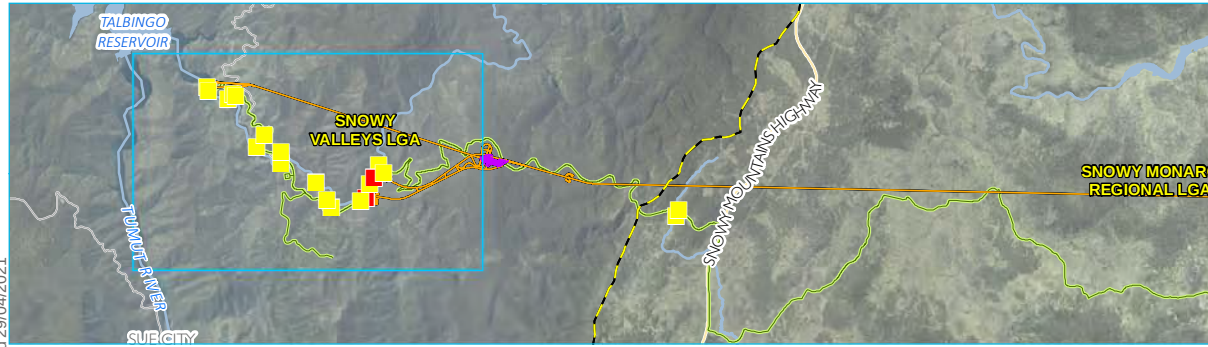


|                                      | Nitrogen (Total) | Copper (filtered) | Iron (filtered) | Manganese (filtered) | Nickel (filtered) | Zinc (filtered) |
|--------------------------------------|------------------|-------------------|-----------------|----------------------|-------------------|-----------------|
|                                      | mg/L             | mg/L              | mg/L            | mg/L                 | mg/L              | mg/L            |
| EQL                                  | 0.01             | 0.001             | 0.05            | 0.005                | 0.001             | 0.005           |
| Snowy 2.0 - Surface Water Guidelines | 0.25             | 0.001             | 0.3             | 1.2                  | 0.008             | 0.0024          |
| Field ID                             | Date             |                   |                 |                      |                   |                 |
| EPL 1                                | 09 Aug 2022      | 0.3               | <0.001          | <0.05                | 0.17              | 0.017           |
| EPL 2                                | 09 Aug 2022      | 13                | 0.005           | 1.8                  | 0.16              | 0.003           |
| EPL 25                               | 10 Aug 2022      | 0.3               | 0.012           | 0.88                 | 1.2               | 0.013           |
| EPL 25                               | 11 Nov 2022      | 0.5               | <0.001          | 6.1                  | 1.3               | 0.013           |

Figure 2 - EPL Exceedance - Groundwater



\\lemmsvr1\EMMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL006 MonLocsLobHole 20210429 06.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

|                                      | Nitrite + Nitrate as N | Cyanide Total | Nitrogen (Total) | Aluminium (filtered) | Copper (filtered) | Iron (filtered) | Lead (filtered) | Zinc (filtered) |
|--------------------------------------|------------------------|---------------|------------------|----------------------|-------------------|-----------------|-----------------|-----------------|
|                                      | mg/L                   | mg/L          | mg/L             | mg/L                 | mg/L              | mg/L            | mg/L            | mg/L            |
| EQL                                  | 0.002                  | 0.004         | 0.01             | 0.005                | 0.001             | 0.05            | 0.001           | 0.005           |
| Snowy 2.0 - Surface Water Guidelines | 0.015                  | 0.004         | 0.25             | 0.027                | 0.001             | 0.3             | 0.001           | 0.0024          |
| Field ID                             | Date                   |               |                  |                      |                   |                 |                 |                 |
| EPL 5                                | 11 Jun 2022            | 0.04          | <0.004           | 0.46                 | 0.058             | <0.001          | 0.07            | <0.001          |
| EPL 05                               | 02 Jul 2022            | <0.01         | <0.004           | 0.01                 | 0.041             | <0.001          | <0.05           | <0.001          |
| EPL 5                                | 04 Oct 2022            | <0.01         | <0.004           | 0.14                 | 0.044             | <0.001          | <0.05           | <0.001          |
| EPL 6                                | 11 Jun 2022            | 0.02          | <0.004           | 0.08                 | 0.036             | <0.001          | <0.05           | <0.001          |
| EPL 6                                | 07 Aug 2022            | 0.15          | <0.004           | 0.21                 | <0.005            | 0.002           | <0.05           | <0.001          |
| EPL 6                                | 04 Oct 2022            | 0.04          | <0.004           | 0.10                 | 0.019             | <0.001          | <0.05           | <0.001          |
| EPL 8                                | 11 Jun 2022            | 0.06          | <0.004           | 0.45                 | 0.025             | <0.001          | 0.05            | <0.001          |
| EPL 8                                | 04 Oct 2022            | <0.01         | <0.004           | 0.05                 | 0.036             | <0.001          | <0.05           | <0.001          |
| EPL 9                                | 07 Aug 2022            | 0.12          | <0.004           | 0.54                 | 0.012             | 0.002           | <0.05           | <0.001          |
| EPL 9                                | 04 Oct 2022            | <0.01         | 0.23             | 0.04                 | 0.036             | <0.001          | <0.05           | <0.001          |
| EPL 12                               | 11 Jun 2022            | 0.12          | <0.004           | 0.22                 | 0.11              | 0.012           | 0.10            | <0.001          |
| EPL 12                               | 07 Aug 2022            | 0.04          | <0.004           | 0.35                 | 0.33              | 0.002           | 0.37            | 0.002           |
| EPL 14                               | 11 Jun 2022            | 0.05          | 0.004            | 0.63                 | 0.028             | <0.001          | 0.07            | <0.001          |
| EPL 14                               | 02 Jul 2022            | <0.01         | <0.004           | 0.02                 | 0.029             | <0.001          | <0.05           | <0.001          |
| EPL 14                               | 06 Aug 2022            | 0.07          | <0.004           | 0.27                 | 0.047             | 0.003           | 0.06            | <0.001          |
| EPL 15                               | 11 Jun 2022            | 0.05          | <0.004           | 0.52                 | 0.044             | <0.001          | 0.06            | <0.001          |
| EPL 15                               | 02 Jul 2022            | <0.01         | <0.004           | 0.02                 | 0.040             | <0.001          | <0.05           | <0.001          |
| EPL 15                               | 06 Aug 2022            | 0.10          | <0.004           | 0.55                 | 0.10              | <0.001          | 0.10            | <0.001          |
| EPL 15                               | 04 Oct 2022            | 0.02          | <0.004           | 0.12                 | 0.026             | <0.001          | <0.05           | <0.001          |
| EPL 16                               | 11 Jun 2022            | 0.06          | 0.007            | 0.49                 | 0.045             | 0.002           | 0.06            | <0.001          |
| EPL 16                               | 02 Jul 2022            | <0.01         | <0.004           | <0.01                | 0.023             | 0.005           | <0.05           | <0.001          |
| EPL 16                               | 07 Aug 2022            | 0.22          | <0.004           | 0.59                 | 0.012             | 0.003           | <0.05           | <0.001          |
| EPL 16                               | 04 Oct 2022            | <0.01         | <0.004           | 0.03                 | 0.032             | <0.001          | <0.05           | <0.001          |
| EPL 24                               | 11 Jun 2022            | 0.09          | <0.004           | 0.46                 | 0.057             | <0.001          | 0.07            | <0.001          |
| EPL 24                               | 02 Jul 2022            | 0.09          | <0.004           | 0.13                 | 0.025             | 0.003           | 0.05            | <0.001          |
| EPL 24                               | 07 Aug 2022            | 0.04          | <0.004           | 0.19                 | 0.24              | 0.004           | 0.22            | <0.001          |
| EPL 24                               | 04 Oct 2022            | <0.01         | <0.004           | 0.05                 | 0.038             | <0.001          | <0.05           | <0.001          |

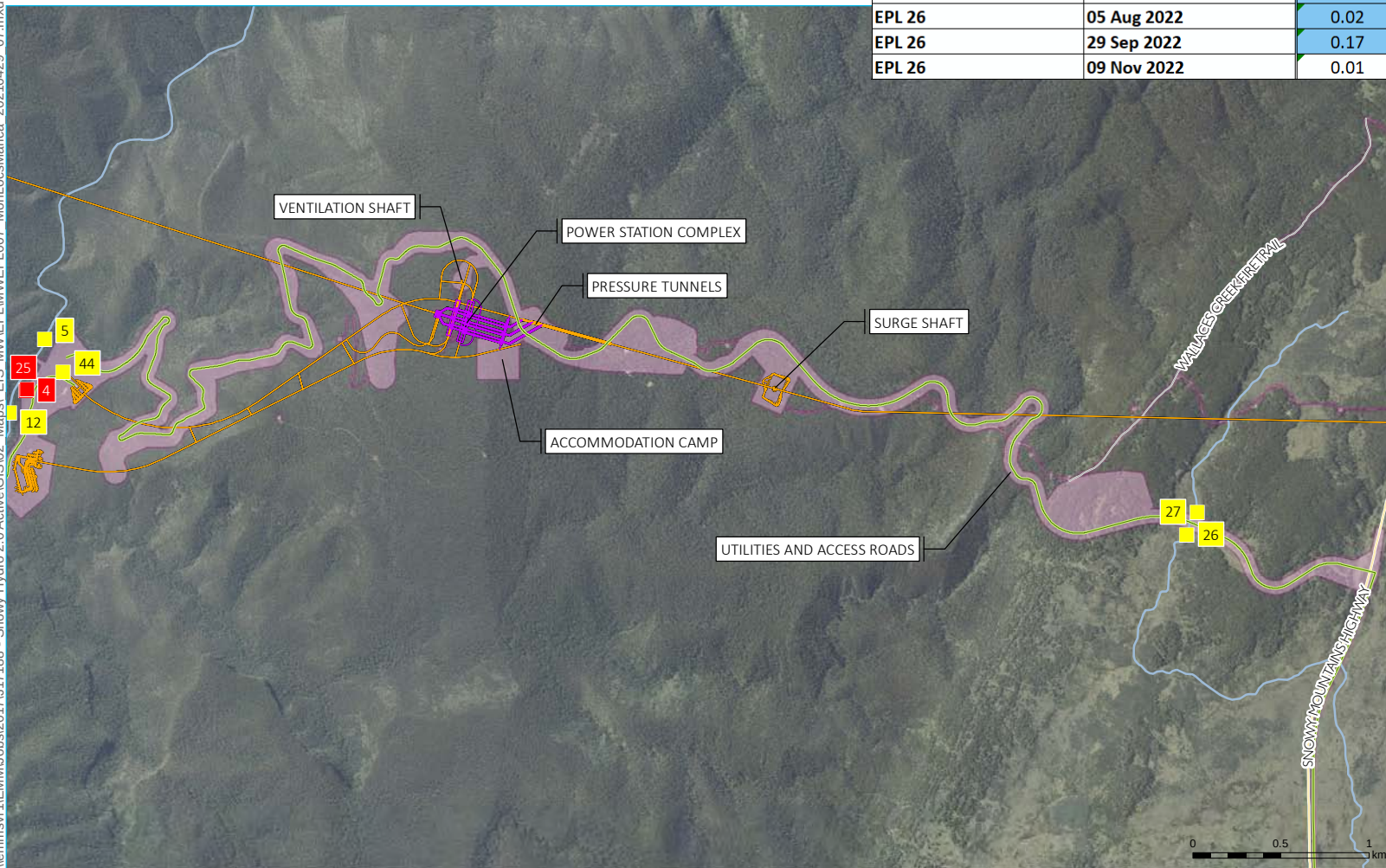
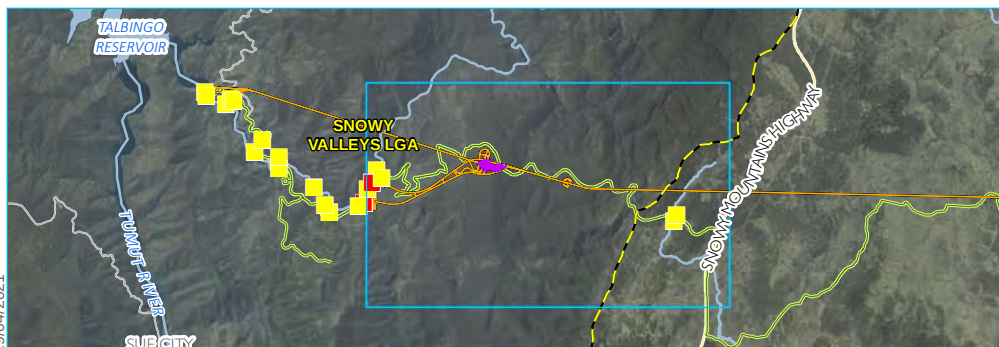
Figure 3 - EPL Exceedance - Surface Water

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GDA 1994 MGA Zone 55

\\lemmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWEP\MWEP\007 MonLocsMarica 20210429 07.mxd 29/04/2021



Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

|                                      |             | Nitrite + Nitrate as N | Cyanide Total | Nitrogen (Total) | Aluminium (filtered) | Chromium (III+VI) (filtered) |
|--------------------------------------|-------------|------------------------|---------------|------------------|----------------------|------------------------------|
|                                      |             | mg/L                   | mg/L          | mg/L             | mg/L                 | mg/L                         |
| EQL                                  |             | 0.002                  | 0.004         | 0.01             | 0.005                | 0.001                        |
| Snowy 2.0 - Surface Water Guidelines |             | 0.015                  | 0.004         | 0.25             | 0.027                | 0.00001                      |
| Field ID                             | Date        |                        |               |                  |                      |                              |
| EPL 26                               | 20 Jun 2022 | 0.06                   | <0.004        | 0.06             | 0.025                | <0.001                       |
| EPL 26                               | 03 Jul 2022 | 0.02                   | <0.004        | 0.07             | 0.035                | <0.001                       |
| EPL 27                               | 03 Jul 2022 | 0.11                   | 0.005         | 0.18             | 0.031                | <0.001                       |
| EPL 26                               | 05 Aug 2022 | 0.02                   | <0.004        | 0.22             | 0.044                | <0.001                       |
| EPL 26                               | 29 Sep 2022 | 0.17                   | <0.004        | 0.41             | <0.005               | <0.001                       |
| EPL 26                               | 09 Nov 2022 | 0.01                   | <0.004        | <0.1             | <0.005               | 0.001                        |

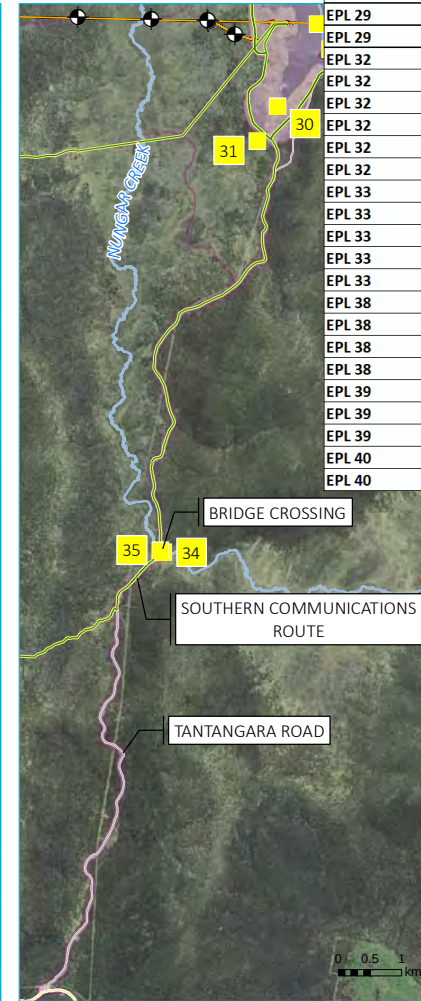
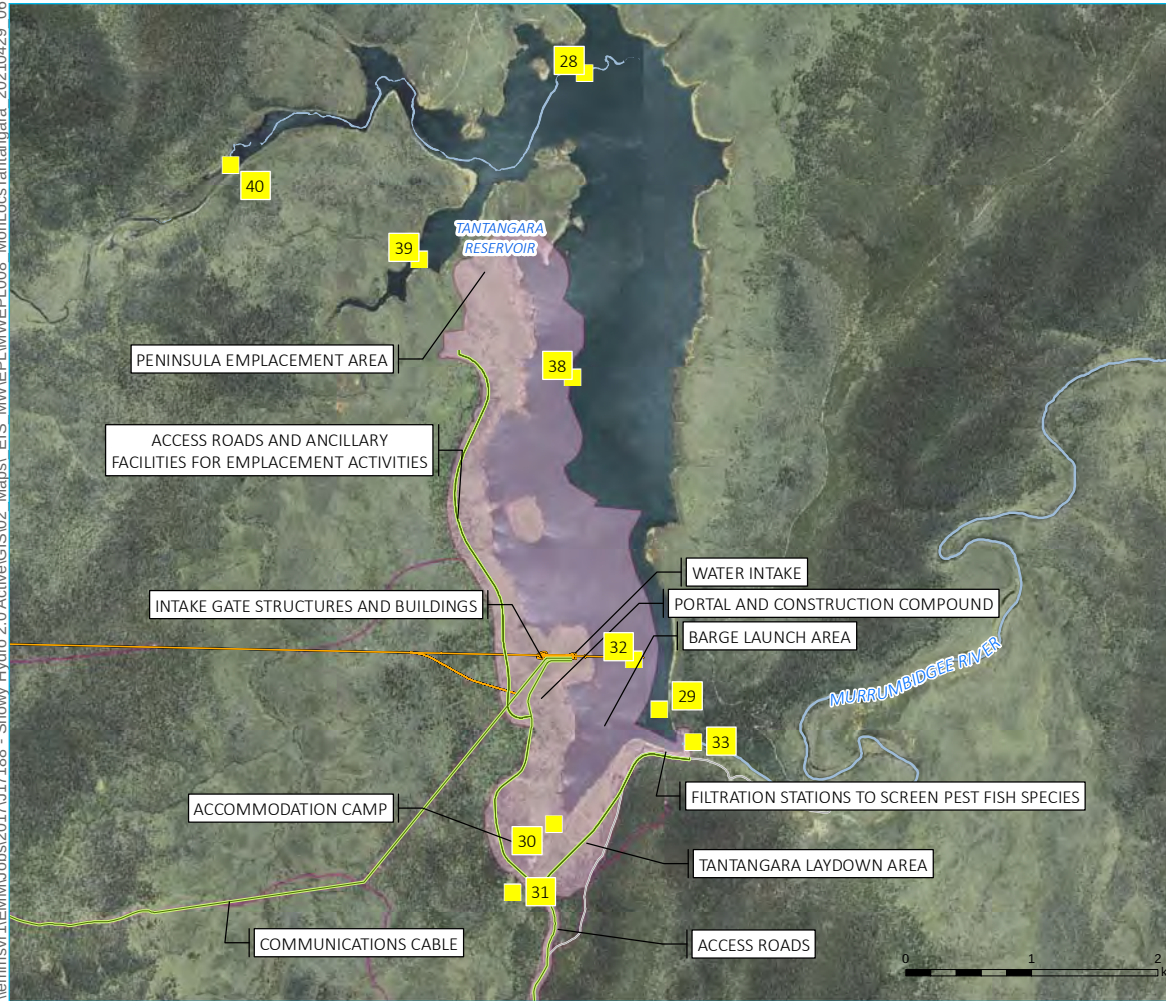
Figure 4 - EPL Exceedance - Surface Water

snowyhydro



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\\emmsvr1\EMM\Jobs\2017\J17188 - Snowy Hydro 2.0 Active\GIS\02 Maps\ EIS MWIEPL\MWIEPL008 MonLocsTantangara 20210429 06.mxd 29/04/2021



|                                      |             | Nitrite + Nitrate as N | Cyanide Total | Nitrogen (Total) | Aluminium (filtered) | Chromium (III+VI) (filtered) |
|--------------------------------------|-------------|------------------------|---------------|------------------|----------------------|------------------------------|
|                                      |             | mg/L                   | mg/L          | mg/L             | mg/L                 | mg/L                         |
| EQL                                  |             | 0.002                  | 0.004         | 0.01             | 0.005                | 0.001                        |
| Snowy 2.0 - Surface Water Guidelines |             | 0.015                  | 0.004         | 0.25             | 0.027                | 0.00001                      |
| Field ID                             | Date        |                        |               |                  |                      |                              |
| EPL 28                               | 16 Jun 2022 | <0.01                  | 0.005         | 0.13             | 0.027                | <0.001                       |
| EPL 28                               | 08 Jul 2022 | 0.02                   | <0.004        | 0.21             | 0.022                | <0.001                       |
| EPL 28                               | 21 Aug 2022 | <0.01                  | <0.004        | 0.10             | 0.041                | <0.001                       |
| EPL 28                               | 02 Oct 2022 | <0.01                  | <0.004        | 0.10             | 0.053                | <0.001                       |
| EPL 28                               | 12 Nov 2022 | <0.01                  | <0.004        | 0.1              | 0.021                | 0.002                        |
| EPL 29                               | 16 Jun 2022 | 0.02                   | 0.004         | 0.16             | 0.022                | <0.001                       |
| EPL 29                               | 08 Jul 2022 | 0.05                   | <0.004        | 0.17             | 0.024                | <0.001                       |
| EPL 29                               | 21 Aug 2022 | 0.02                   | <0.004        | 0.13             | 0.11                 | <0.001                       |
| EPL 29                               | 02 Oct 2022 | <0.01                  | <0.004        | 0.13             | 0.047                | <0.001                       |
| EPL 32                               | 16 Jun 2022 | 0.02                   | 0.005         | 0.14             | 0.025                | <0.001                       |
| EPL 32                               | 08 Jul 2022 | 0.07                   | <0.004        | 0.35             | 0.026                | <0.001                       |
| EPL 32                               | 21 Aug 2022 | 0.04                   | <0.004        | 0.15             | 0.089                | 0.002                        |
| EPL 32                               | 11 Sep 2022 | <0.01                  | 0.005         | 0.44             | 0.017                | <0.001                       |
| EPL 32                               | 02 Oct 2022 | <0.01                  | <0.004        | 0.10             | 0.062                | <0.001                       |
| EPL 32                               | 12 Nov 2022 | <0.01                  | <0.004        | 0.1              | 0.028                | 0.001                        |
| EPL 33                               | 03 Jul 2022 | 0.03                   | <0.004        | 0.11             | 0.11                 | <0.001                       |
| EPL 33                               | 19 Aug 2022 | 0.02                   | <0.004        | 0.18             | 0.059                | <0.001                       |
| EPL 33                               | 10 Sep 2022 | <0.01                  | <0.004        | 0.03             | 0.040                | <0.001                       |
| EPL 33                               | 01 Oct 2022 | <0.01                  | <0.004        | 0.10             | 0.044                | <0.001                       |
| EPL 33                               | 10 Nov 2022 | 0.04                   | <0.004        |                  | <0.005               | <0.001                       |
| EPL 38                               | 08 Jul 2022 | 0.02                   | <0.004        | 0.17             | 0.024                | <0.001                       |
| EPL 38                               | 21 Aug 2022 | 0.01                   | <0.004        | 0.11             | 0.24                 | <0.001                       |
| EPL 38                               | 11 Sep 2022 | <0.01                  | <0.004        | 0.06             | 0.060                | <0.001                       |
| EPL 38                               | 02 Oct 2022 | <0.01                  | <0.004        | 0.09             | 0.046                | <0.001                       |
| EPL 39                               | 08 Jul 2022 | 0.05                   | <0.004        | 0.49             | 0.010                | <0.001                       |
| EPL 39                               | 21 Aug 2022 | <0.01                  | <0.004        | 0.05             | 0.11                 | <0.001                       |
| EPL 39                               | 02 Oct 2022 | <0.01                  | <0.004        | 0.10             | 0.059                | <0.001                       |
| EPL 40                               | 08 Jul 2022 | 0.31                   | <0.004        | 0.61             | 0.009                | <0.001                       |
| EPL 40                               | 11 Sep 2022 | <0.01                  | <0.004        | 0.06             | 0.040                | <0.001                       |

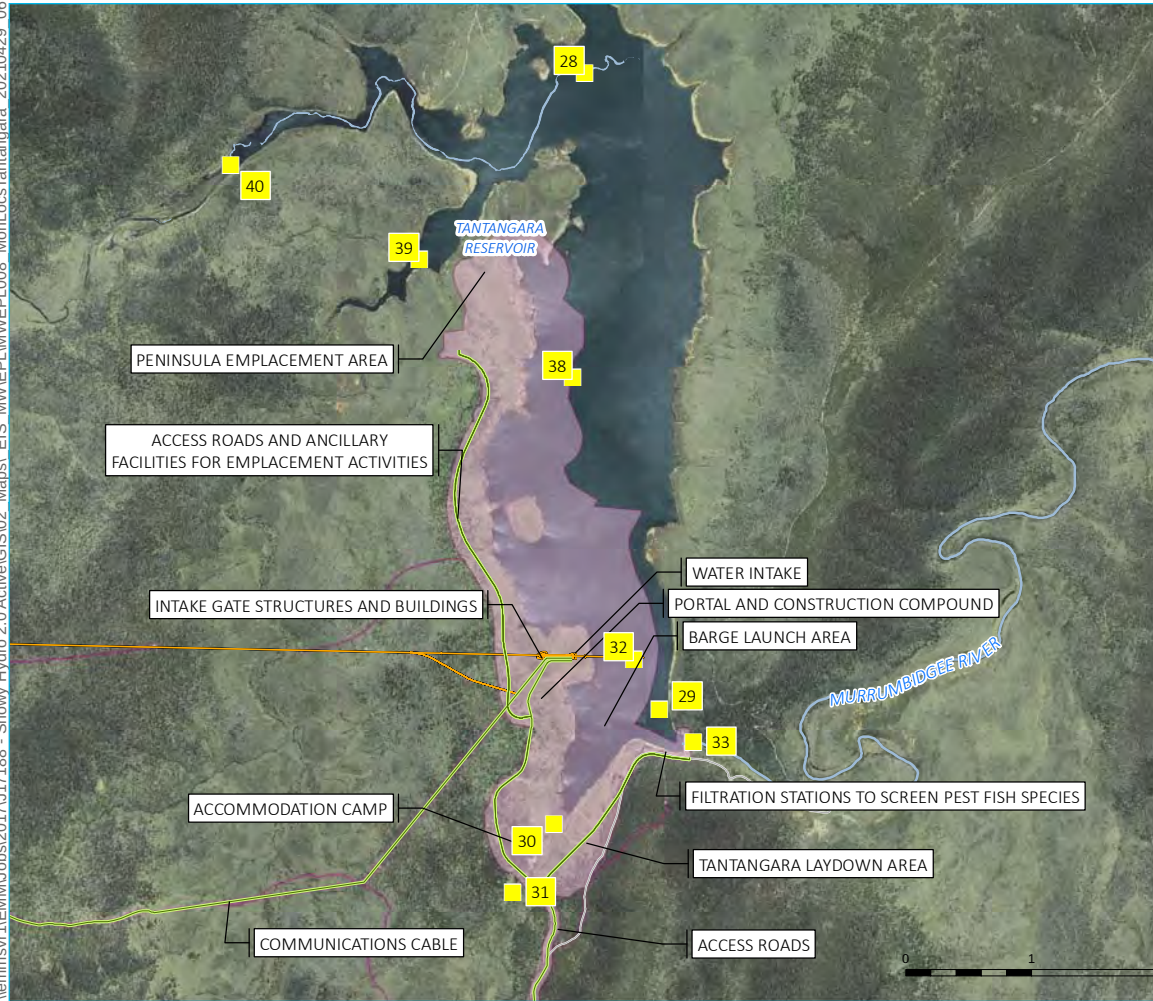
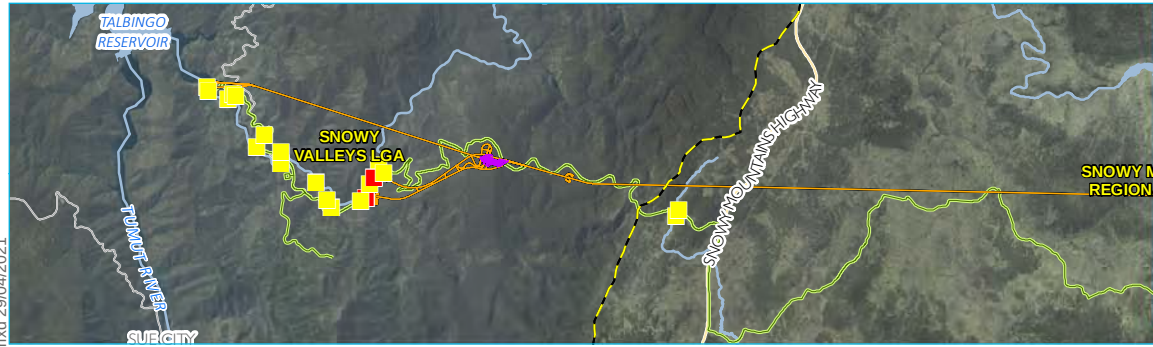
Figure 5 - EPL Exceedance - Reservoir Water

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Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

|                                      | Nitrite + Nitrate as N | Cyanide Total | Aluminium (filtered) | Chromium (III+VI) (filtered) | Zinc (filtered) |
|--------------------------------------|------------------------|---------------|----------------------|------------------------------|-----------------|
|                                      | mg/L                   | mg/L          | mg/L                 | mg/L                         | mg/L            |
| EQL                                  | 0.002                  | 0.004         | 0.005                | 0.001                        | 0.005           |
| Snowy 2.0 - Surface Water Guidelines | 0.015                  | 0.004         | 0.027                | 0.00001                      | 0.0024          |
| Field ID                             | Date                   |               |                      |                              |                 |
| EPL 30                               | 03 Jul 2022            |               |                      |                              |                 |
| EPL 30                               | 19 Aug 2022            |               |                      |                              |                 |
| EPL 30                               | 10 Sep 2022            |               |                      |                              |                 |
| EPL 30                               | 13 Nov 2022            |               |                      |                              |                 |
| EPL 31                               | 03 Jul 2022            |               |                      |                              |                 |
| EPL 31                               | 19 Aug 2022            |               |                      |                              |                 |
| EPL 31                               | 10 Sep 2022            |               |                      |                              |                 |
| EPL 31                               | 13 Nov 2022            |               |                      |                              |                 |
| EPL 33                               | 03 Jul 2022            |               |                      |                              |                 |
| EPL 33                               | 19 Aug 2022            |               |                      |                              |                 |
| EPL 33                               | 10 Sep 2022            |               |                      |                              |                 |
| EPL 33                               | 01 Oct 2022            |               |                      |                              |                 |
| EPL 33                               | 10 Nov 2022            |               |                      |                              |                 |
| EPL 34                               | 03 Jul 2022            |               |                      |                              |                 |
| EPL 34                               | 01 Oct 2022            |               |                      |                              |                 |
| EPL 34                               | 10 Nov 2022            |               |                      |                              |                 |
| EPL 35                               | 03 Jul 2022            |               |                      |                              |                 |
| EPL 35                               | 19 Aug 2022            |               |                      |                              |                 |
| EPL 35                               | 10 Sep 2022            |               |                      |                              |                 |

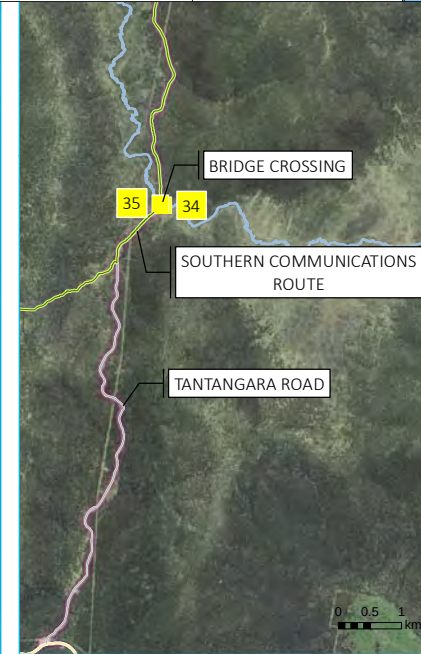


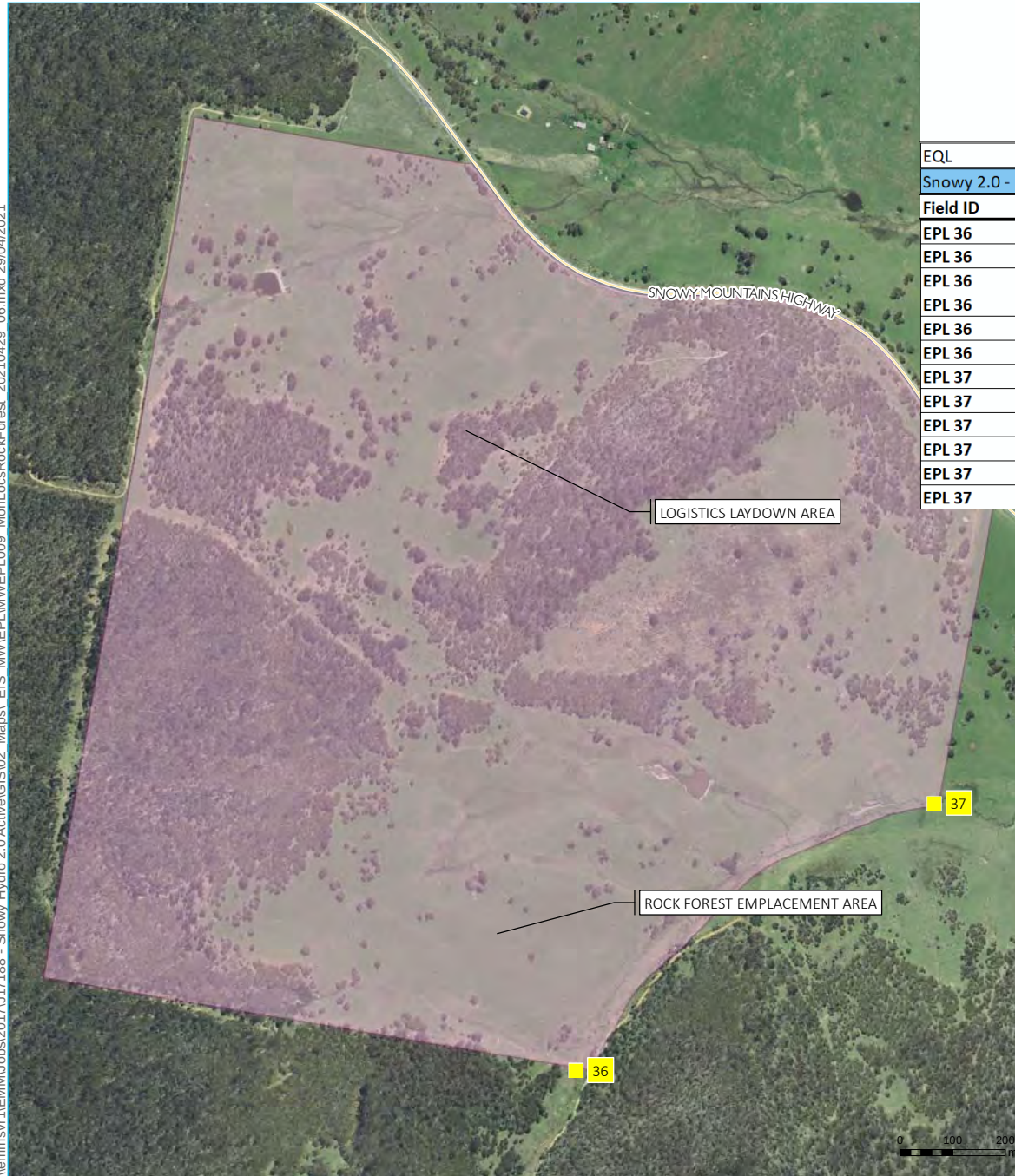
Figure 6 - EPL Exceedance - Surface Water

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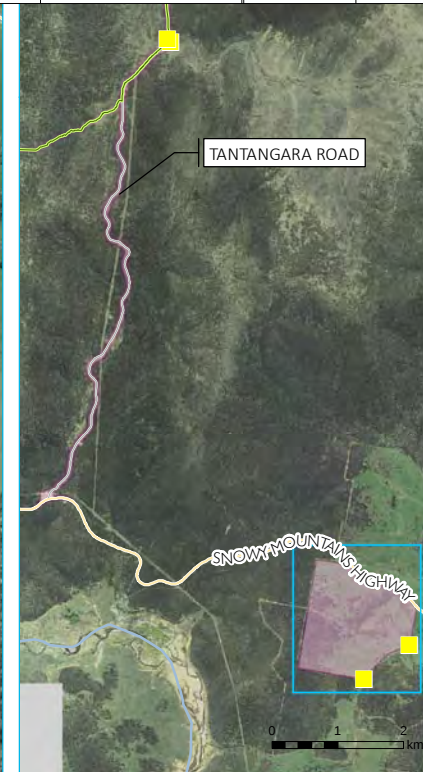
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Source: EMM (2019); Snowy Hydro (2019); DFSI (2017); LPMA (2011)

|                                      |             | Nitrite + Nitrate as N | Nitrogen (Total) | Aluminium (filtered) | Chromium (III+VI)<br>(filtered) | Copper (filtered) | Iron (filtered) |
|--------------------------------------|-------------|------------------------|------------------|----------------------|---------------------------------|-------------------|-----------------|
|                                      |             | mg/L                   | mg/L             | mg/L                 | mg/L                            | mg/L              | mg/L            |
| EQL                                  |             | 0.002                  | 0.01             | 0.005                | 0.001                           | 0.001             | 0.05            |
| Snowy 2.0 - Surface Water Guidelines |             | 0.015                  | 0.25             | 0.027                | 0.00001                         | 0.001             | 0.3             |
| Field ID                             | Date        |                        |                  |                      |                                 |                   |                 |
| EPL 36                               | 16 Jun 2022 | 0.04                   | 0.17             | 0.032                | <0.001                          | <0.001            | 0.16            |
| EPL 36                               | 11 Jul 2022 | 0.29                   | 0.47             | 0.15                 | <0.001                          | <0.001            | 0.34            |
| EPL 36                               | 20 Aug 2022 | <0.01                  | 0.11             | 0.13                 | <0.001                          | <0.001            | 0.23            |
| EPL 36                               | 09 Sep 2022 | 0.48                   | 0.44             | 0.054                | <0.001                          | 0.002             | 0.28            |
| EPL 36                               | 01 Oct 2022 | <0.01                  | 0.08             | 0.035                | <0.001                          | <0.001            | 0.15            |
| EPL 36                               | 09 Nov 2022 | <0.01                  | 0.2              | 0.025                | <0.001                          | <0.001            | 0.14            |
| EPL 37                               | 16 Jun 2022 | 0.03                   | 0.21             | 0.032                | <0.001                          | <0.001            | 0.16            |
| EPL 37                               | 11 Jul 2022 | 0.06                   | 0.45             | 0.17                 | <0.001                          | <0.001            | 0.36            |
| EPL 37                               | 20 Aug 2022 | <0.01                  | 0.19             | 0.022                | <0.001                          | <0.001            | 0.08            |
| EPL 37                               | 09 Sep 2022 | 8.7                    | 0.55             | 0.064                | <0.001                          | <0.001            | 0.26            |
| EPL 37                               | 01 Oct 2022 | <0.01                  | 0.04             | 0.030                | <0.001                          | <0.001            | 0.15            |
| EPL 37                               | 09 Nov 2022 | <0.01                  | 0.2              | 0.015                | 0.001                           | <0.001            | 0.14            |



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Figure 7 - EPL Exceedance  
- Surface Water  
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