Pre-construction Water Quality Monitoring Report

Event 16 2023

Project Number: 22-013

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1. Introduction

In 2020 Snowy Hydro Limited (Snowy Hydro) obtained approval (application number SSI 9208 and EPBC 2018/8322) to expand the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme), by linking the existing Tantangara and Talbingo reservoirs through a series of underground tunnels and constructing a new underground hydro-electric power station (referred to as 'Snowy 2.0').

To connect Snowy 2.0 to the National Energy Market (NEM), a new transmission connection is required. NSW Electricity Networks Operations Pty Ltd as a trustee for NSW Electricity Operations Trust (known as TransGrid and the Proponent) will construct a substation and overhead transmission lines (the Project) to facilitate the connection of Snowy 2.0 to the existing electrical transmission network. The Project location is approximately 27 kilometres (km) east of Tumbarumba, New South Wales (NSW). UGL has been engaged on behalf of the Proponent to undertake the Project.

The purpose of the pre-construction water quality monitoring is to address the requirements of the Environmental Impact Statement (EIS) (Jacobs 2020) that was prepared by the Proponent under Part 5, Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979* to assess the environmental impacts of the proposed Project. Subsequently, an Amendment Report (TransGrid 2021b) was submitted with the Response to Submissions (TransGrid 2021a) to the Department of Planning and Environment (DPE) with updated mitigation measures for the Project.

The objective of the pre-construction surface water quality monitoring is to collect baseline data prior to Project construction works. Baseline data will be compared to ANZG (2018) guidelines to characterise the existing surface water quality. The data will be compared to the water quality objectives (WQO) for the Project area.

2. Program and methodology

The Pre-construction Water Quality Monitoring Program and Methodology (the Program) (NGH 2022) has been prepared to detail the WQOs for the Project, the location of the monitoring locations and the methodology for water sampling.

The Project area within Kosciuszko National Park is an area of high conservation value. Therefore, the water quality objectives for physical and chemical stressors includes **no change beyond natural variability** (ANZG 2018). The Default Guideline Values (DGV) for Upland Rivers has been provided for physical and chemical stressors and is detailed in the Program (NGH 2022).

The location of the sampling points in relation to the Project footprint is provided in Figure 2-1.

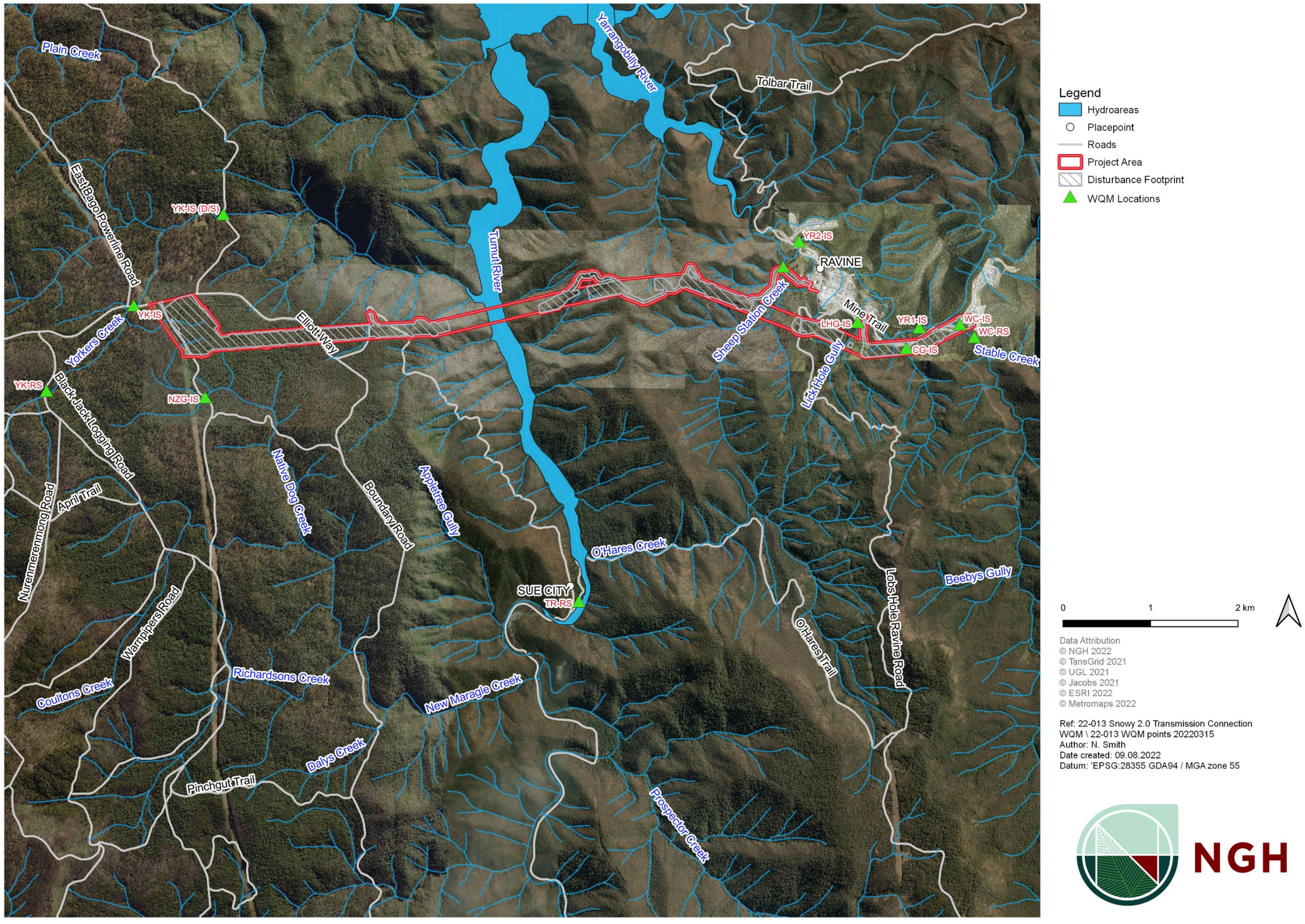

Figure 2-1 WQM locations

3. Monitoring event observations and results

Images for Wallaces Creek, Yarrangobilly River and New Zealand Gully are provided as Figure 3-1 to Figure 3-3. Water quality results for each site are provided in Appendix A. Results are highlighted where they exceed the default guideline value (refer to the Program (NGH 2022)). Table 3-1 identifies exceedances of the DGVs for metals, cyanide and nutrients. Physico-chemical results have been provided in Figure 3-4 to Figure 3-33. Field data and observations are provided in Appendix B.

3.1. Event 16

NGH has conducted 16 monthly sampling events since March 2022 (Event 1). Reports for each event were prepared following receival of the laboratory results (NGH 2022a; 2022b; 2022c; 2022d; 2022e, 2022f, 2022g, 2022h, 2022i, 2022j, 2023a, 2023b, 2023c, 2023d and 2023e). The results of Event 1 through to Event 15 have been compared in this report to the results of Event 16.

NGH Environmental Scientist, Nicola Smith, conducted the Event 16 monitoring event with a UGL representative on 28 and 29 June 2023. The weather was cloudy and lightly raining. Data from the Cabramurra SMHEA automatic weather station on 28 June 2023 (Station ID 072161) indicates that the wind was from the west with speeds of 19 km/hr in the morning and 17 km/hr in the afternoon. Temperatures on the day included a low of 0.0°C and a high of 0.8°C. Data from the Tumbarumba weather station for 29 June 2023 (Station ID 072043) indicates that temperatures ranged from a low of 3.0°C to a high of 9.5°C.

Clear water flows were observed. No hydrocarbon sheen or odours were noted. The banks of each channel were well vegetated with the vegetation matrix weedier in some locations. Evidence of bank erosion from hooved animals was observed at the New Zealand Gully site, the Yorkers Creek impact site and Yorkers Creek reference site. Flows were observed to have increased, in comparison to recent sampling events.

Figure 3-1 Wallaces Creek (WC-IS)

Figure 3-2 Yarrangobilly River (YR2-RS)

Figure 3-3 New Zealand Gully (NZG-IS)

3.1.1. Results

The results indicate that the water quality in the locations where samples were taken generally meets the DGVs for Upland Rivers with a 99% species protection level for toxicants. Locations where a laboratory result was returned for a physical or chemical stressor was above the DGV are provided in Table 3-1.

Table 3-1 Results above the DGV for Upland Rivers with 99% species protection level

Site identification	Analyte	DGV	Result	Comment
WC-RS	Aluminium mg/L	0.027	0.75	The results for Aluminium, Iron and TSS are elevated, compared to previous sampling events.
	Iron mg/L	0.3	0.46	
	Total Phosphorous mg/L	0.02	0.05	
	Reactive Phosphorous mg/L	0.015	0.07	
	Total Suspended Solids mg/L	0.2	26	
CG-IS	Aluminium mg/L	0.027	0.16	Always returns a high total dissolved solid result.
	Reactive Phosphorous mg/L	0.015	0.03	
	Zinc mg/L	0.0024	0.005	
	Total Dissolved Solids (TDS) mg/L		242	
LHG-IS	Aluminium mg/L	0.027	0.38	Results for Aluminium, Zinc and TSS are consistent with prior sampling events. Always returns a high total dissolved solid result.
	Copper mg/L	0.001	0.013	
	Zinc mg/L	0.0024	0.008	
	Reactive Phosphorous mg/L	0.015	0.05	
	Total Suspended Solids mg/L	0.2	10	
	Total Dissolved Solids (TDS) mg/L		228	
WC-IS	Aluminium mg/L	0.027	0.67	Results for aluminium, iron, TSS and reactive

Site identification	Analyte	DGV	Result	Comment
	Iron mg/L	0.3	0.39	phosphorous are elevated, compared to previous sampling events.
	Reactive Phosphorous mg/L	0.015	0.07	
	Total Phosphorous mg/L	0.02	0.15	
	Total Suspended Solids mg/L	0.2	17	
YK-IS (D/S)	Aluminium mg/L	0.027	0.4	Copper and Zinc returned a result above LOR, which is atypical of this sampling location. Results for the other analytes were consistent with prior sampling events. Located within Bago State Forest and adjacent to an unsealed track. Unknown activities within the State Forest upstream. Sample taken upstream of culvert.
	Copper mg/L	0.001	0.005	
	Zinc mg/L	0.0024	0.003	
	Total Suspended Solids mg/L	0.2	5	
	Reactive Phosphorous mg/L	0.015	0.004	
NZG-IS	Aluminium mg/L	0.027	0.3	Results are consistent with prior sampling events Located within Bago State Forest. Sample taken upstream of timber supported unsealed track bridge. Banks heavily vegetated, shallow channel.
	Reactive phosphorous mg/L	0.015	0.04	
YK-RS	Aluminium mg/L	0.027	0.34	Results are consistent with prior sampling events Located within Bago State Forest and adjacent to an unsealed track. Unknown activities within the State Forest upstream. Sample taken downstream of culvert under unsealed track. Flow through culvert is restricted upstream causing a wetland environment.
	Total Phosphorous mg/L	0.02	0.03	
	Reactive phosphorous mg/L	0.015	0.04	
YK-IS	Aluminium mg/L	0.027	0.39	Located within Bago State Forest and adjacent to Elliott Way (road). Unknown activities within the State Forest upstream.
	Total Suspended	0.2	5	

Site identification	Analyte	DGV	Result	Comment
	Solids mg/L			
	Reactive phosphorous mg/L	0.015	0.04	
YR1-RS	Aluminium mg/L	0.027	0.47	This is consistent with prior sampling events
	Total Suspended Solids mg/L	0.2	8	
YR2-RS	Aluminium mg/L	0.027	0.46	This is consistent with prior sampling events
	Reactive phosphorous mg/L	0.015	0.06	
	Total Suspended Solids mg/L	0.2	6	
SSC-IS	Aluminium mg/L	0.027	1.49	Result for aluminium and iron are notably higher than E15 sampling event. However, both Al and Fe are similar to results recorded in Event 8 and Event 9.
	Iron mg/L	0.3	0.72	
	Zinc	0.0024	0.003	
	Reactive phosphorous mg/L	0.015	0.04	
	Total Suspended Solids mg/L	0.2	2	
TR-RS	Aluminium mg/L	0.027	0.05	Results are higher than previous sampling events.
	Reactive phosphorous mg/L	0.015	0.03	
	Total Phosphorous mg/L	0.02	0.003	

CG-IS and LHG-IS displayed elevated values for total dissolved solids compared to the other sampling locations. Total suspended solids (TSS) at WC-RS, LHG-IS, WC-IS, YK-IS (D/S), YK-IS, YR1-RS, YR2-RS and SSC-IS were above the 0.2 mg/L assigned DGV (refer to Figure 3-18).

Water temperatures ranged from 1.8 degrees Celsius at YR2-RS to 9.3 degrees Celsius at SSC-IS.

Many of the results are recorded as below (<) the limit of detection. To enable calculation of the statistics, the *Limit of Detection Divided by Two (LOD/2) Method* (Cohen and Ryan 1989) has been applied. This data is provided in Appendix A.

The following figures, Figure 3-4 to Figure 3-23, display physico-chemical water quality through time for monitoring events 1 (March 2022) to 16 (June 2023). Where a DGV is available, these values are shown on the graph and have been included for dissolved oxygen (%), conductivity, pH and turbidity.

Although the Talbingo Reservoir is the ultimate catchment for both the Yarrangobilly River and tributaries, and Yorkers Creek and tributaries, the data has been divided into the Talbingo Reservoir catchment, which include the Talbingo Reservoir reference site sampling location and the Yarrangobilly River and its tributaries. These are all located in the Kosciuszko National Park. The Yorkers Creek catchment includes the three sampling locations along Yorkers Creek and New Zealand Gully, which are all located in the Bago State Forest. The confluence of Yorkers Creek with Tumut River (Talbingo Reservoir) is downstream of sampling location TR-RS but upstream of the confluence of the Yarrangobilly River and Tumut River.

Temperatures within the Talbingo Reservoir catchment have generally decreased since Event 12, refer to Figure 3-4. YR2-RS registered the greatest decrease in temperature, from 9.9°C in Event 15 to 1.8°C in Event 16. Temperatures within the Yorkers Creek catchment have also decreased, refer to Figure 3-5.

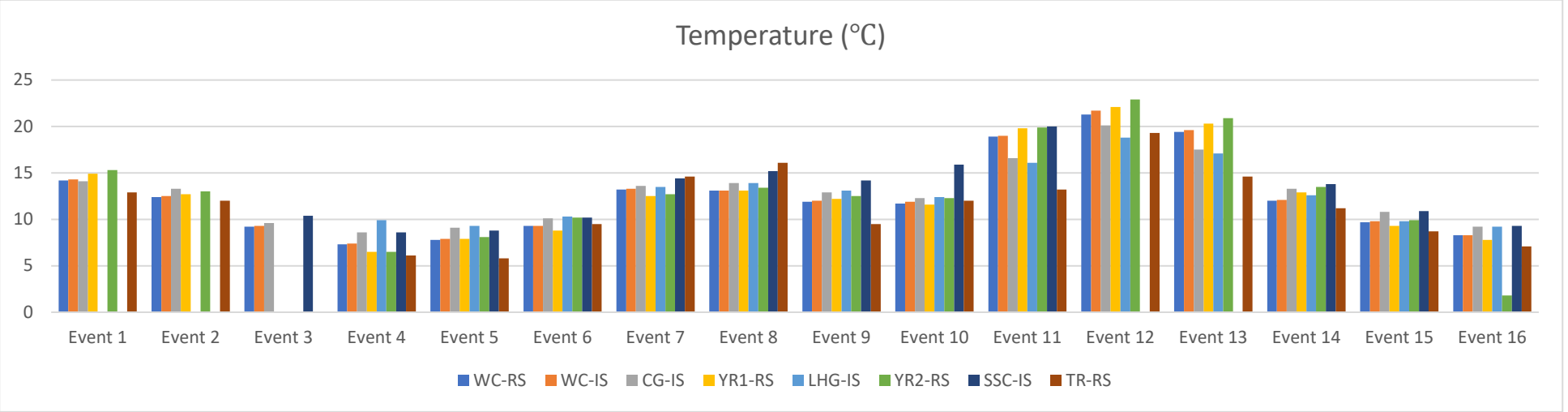

Figure 3-4 Temperature for Talbingo Reservoir catchment

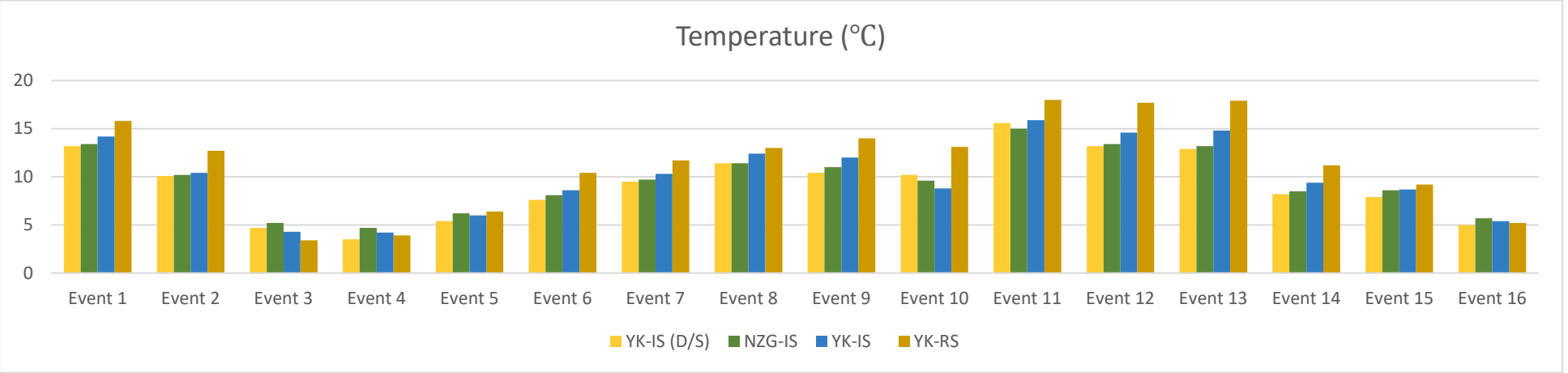

Figure 3-5 Temperature for Yorkers Creek catchment

DO (%) results for the Talbingo Reservoir catchment were within the acceptable DGV range (90-110%) for Event 16 with the exception of LHG-IS (88.9%) and SSC-IS (89.8%), refer to Figure 3-6. DO (%) results for the Yorkers Creek catchment were all below the lower DGV value (90%), refer to Figure 3-7.

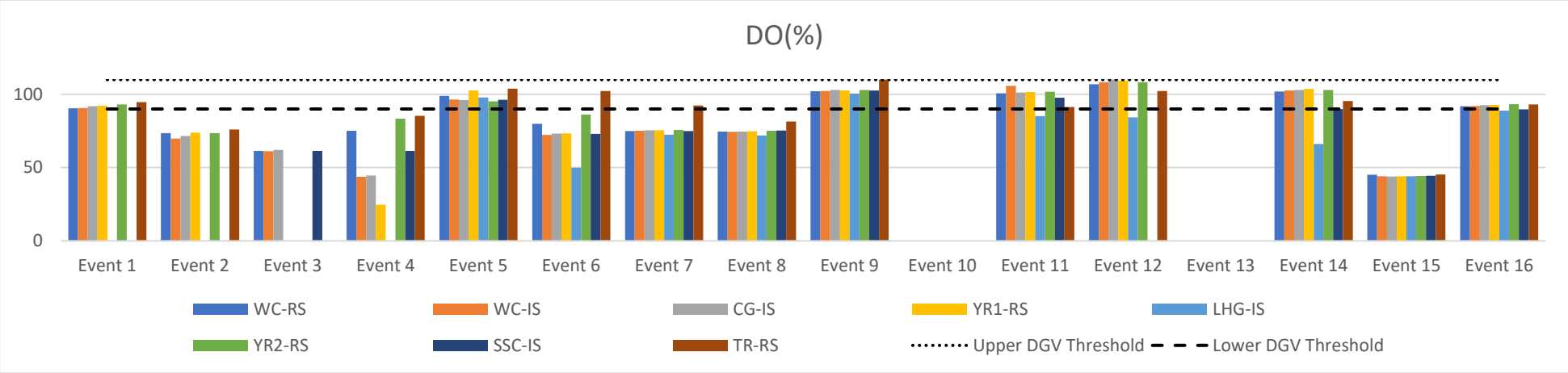

Figure 3-6 Dissolved oxygen (DO%) for Talbingo Reservoir catchment

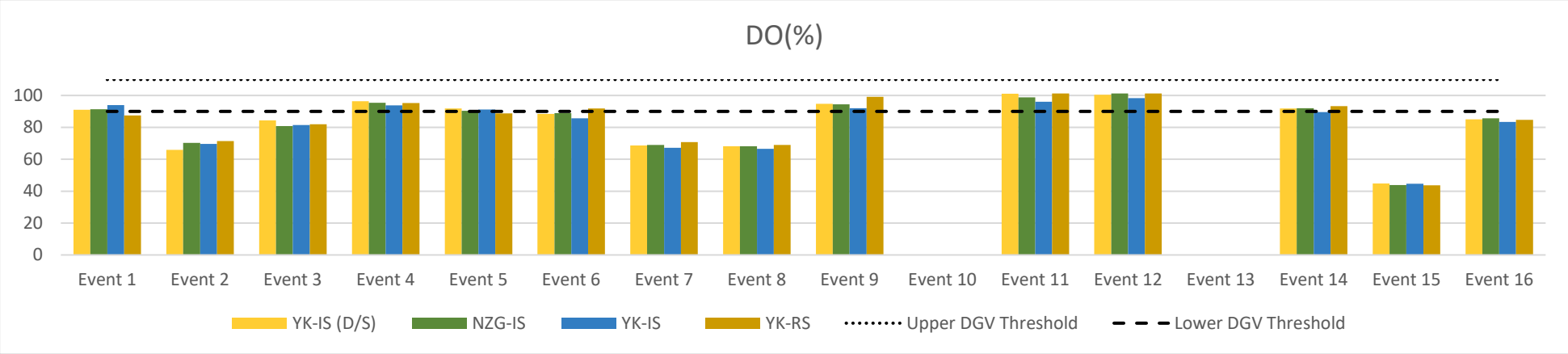

Figure 3-7 Dissolved oxygen (DO%) for Yorkers Creek catchment

The results for DO (ppm) for the Talbingo Reservoir catchment have increased when compared to Event 15, refer to Figure 3-8. The highest reading for DO (ppm) during Event 16 was recorded at TR-RS (11.29 ppm). Results for DO (ppm) within the Yorkers Creek catchment have also increased and are relatively consistent with results from the Talbingo Reservoir catchment, refer to Figure 3-9.

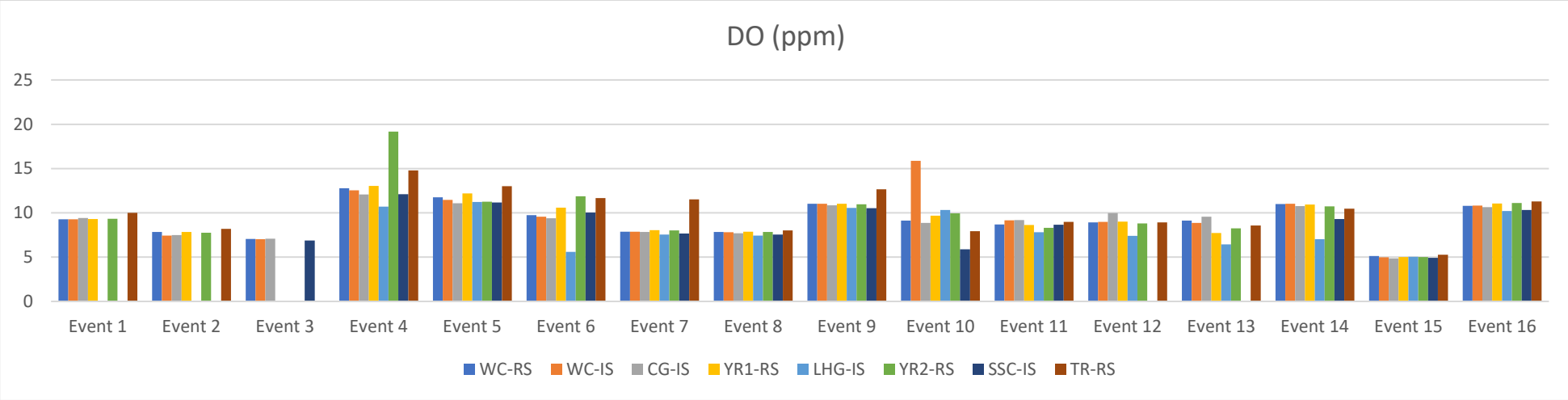

Figure 3-8 Dissolved Oxygen (ppm) for Talbingo Reservoir catchment

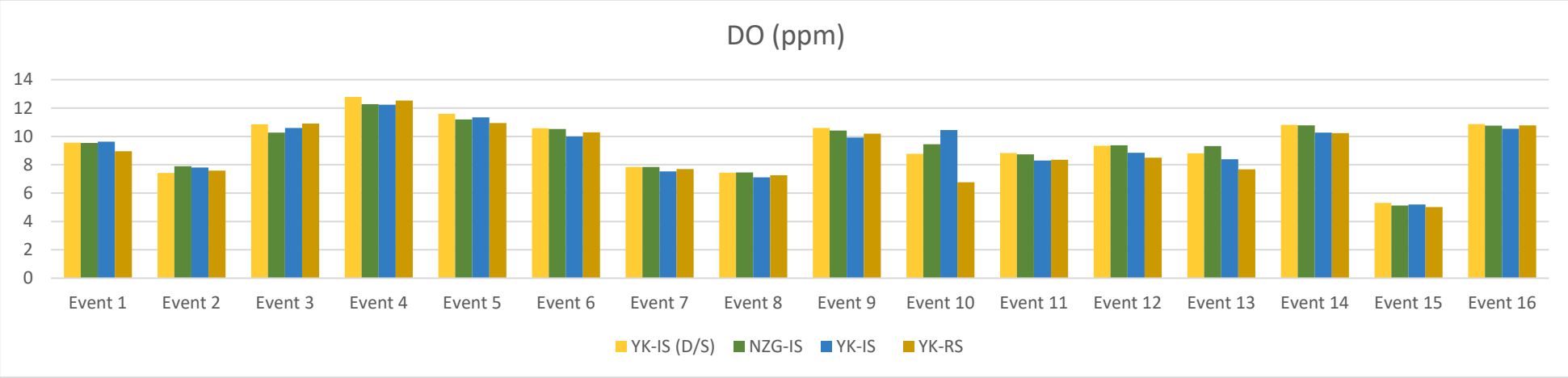

Figure 3-9 Dissolved Oxygen (ppm) for Yorkers Creek catchment

Results for specific conductance within the Talbingo Reservoir catchment for Event 16 have generally decreased since Event 15, refer to Figure 3-10. LHG-IS returned a result of 376.6 µS/cm for Event 16, down from its peak recording of 585 µS/cm for Event 14. Results for specific conductance within the Yorkers Creek catchment for Event 16 have generally decreased, refer to Figure 3-11.

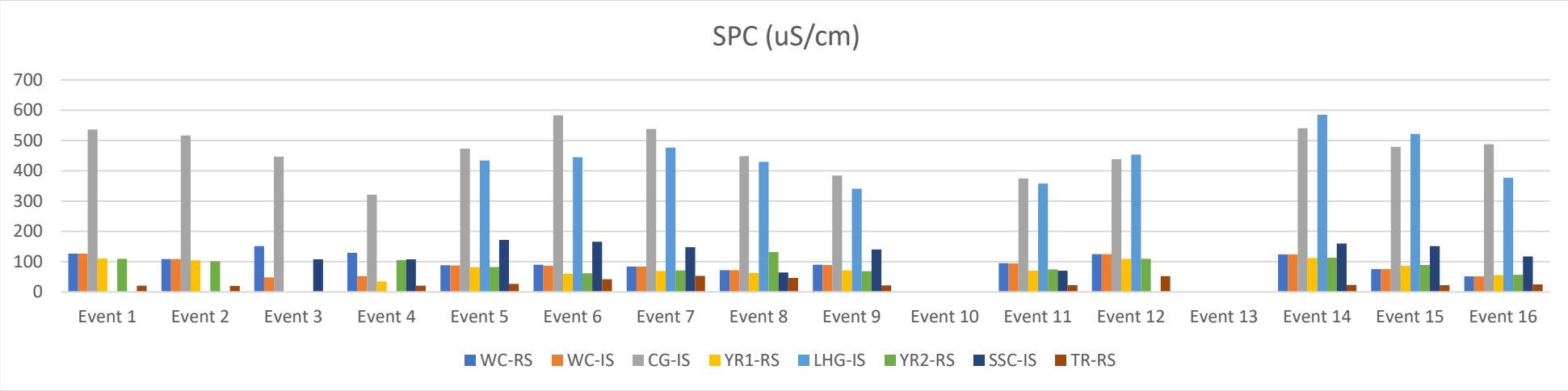

Figure 3-10 Specific Conductance (SPC µS/cm) for Talbingo Reservoir catchment

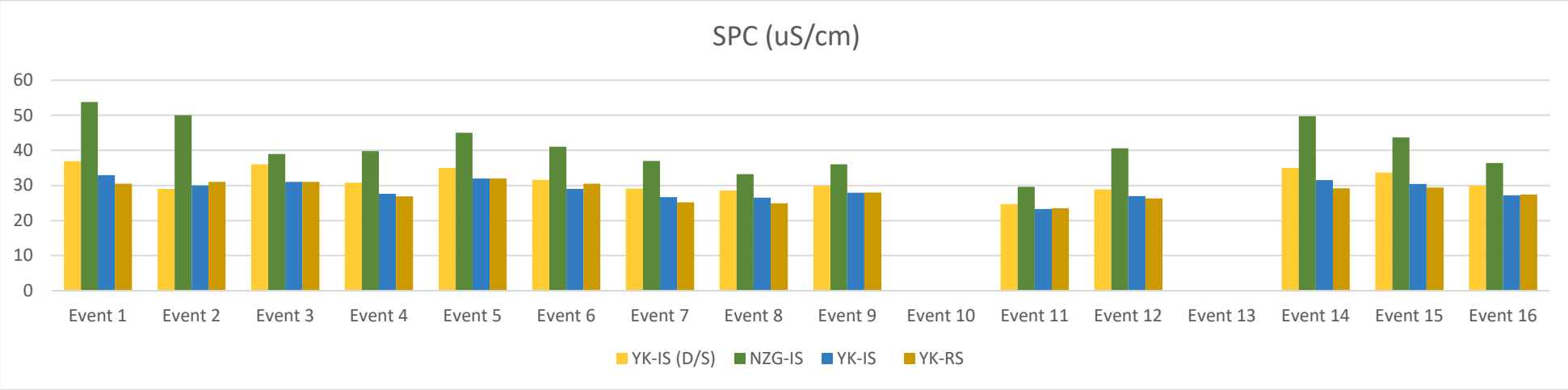

Figure 3-11 Specific Conductance (SPC µS/cm) for Yorkers Creek catchment

Conductivity readings within the Talbingo Reservoir catchment have decreased since Event 14, refer to Figure 3-12. Conductivity (µS/cm) results for CG-IS and LHG-IS continue to be notably higher than the other sites. Conductivity readings within the Yorkers Creek catchment have also decreased, refer to Figure 3-13. The pattern between sites is mostly reflective of the pattern for specific conductance.

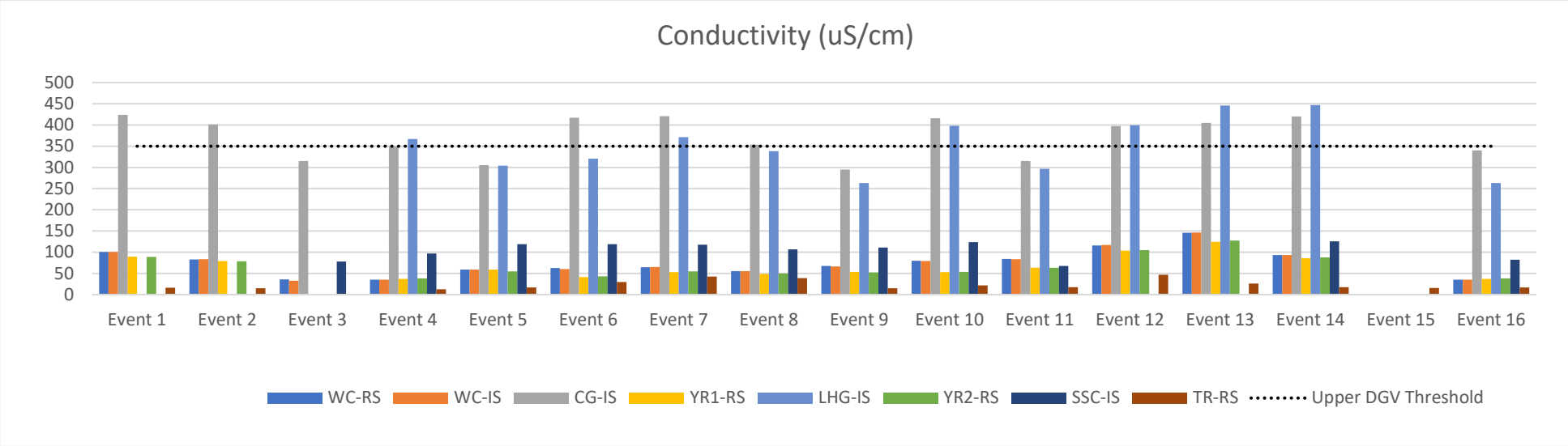

Figure 3-12 Conductivity (µS/cm) for Talbingo Reservoir catchment

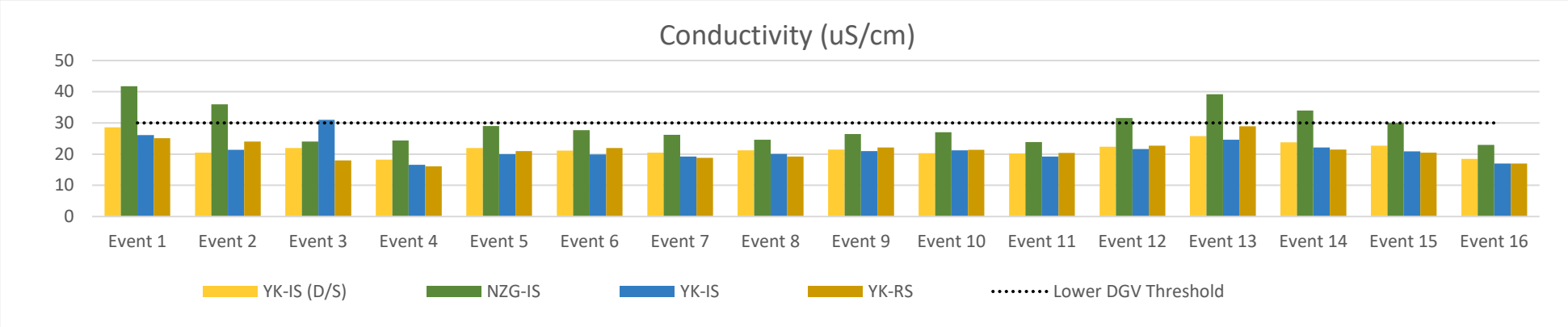

Figure 3-13 Conductivity (µS/cm) for Yorkers Creek catchment

Turbidity values were within the lower and upper DGV thresholds (2 - 25 NTU) for both catchments with the exception of TR-RS (1.42 NTU) for Event 16. Turbidity readings within the Talbingo Reservoir catchment have generally increased since Event 15, refer to Figure 3-14. WC-IS recorded the highest reading (28.1 NTU). Note that the results for CG-IS have been provided in Figure 3-15 to more accurately display the other sampling locations in the Talbingo reservoir catchment.

Turbidity readings within the Yorkers Creek catchment have generally decreased when compared to Event 15, refer to Figure 3-16. YK-IS registered the highest reading of 8.79 NTU.

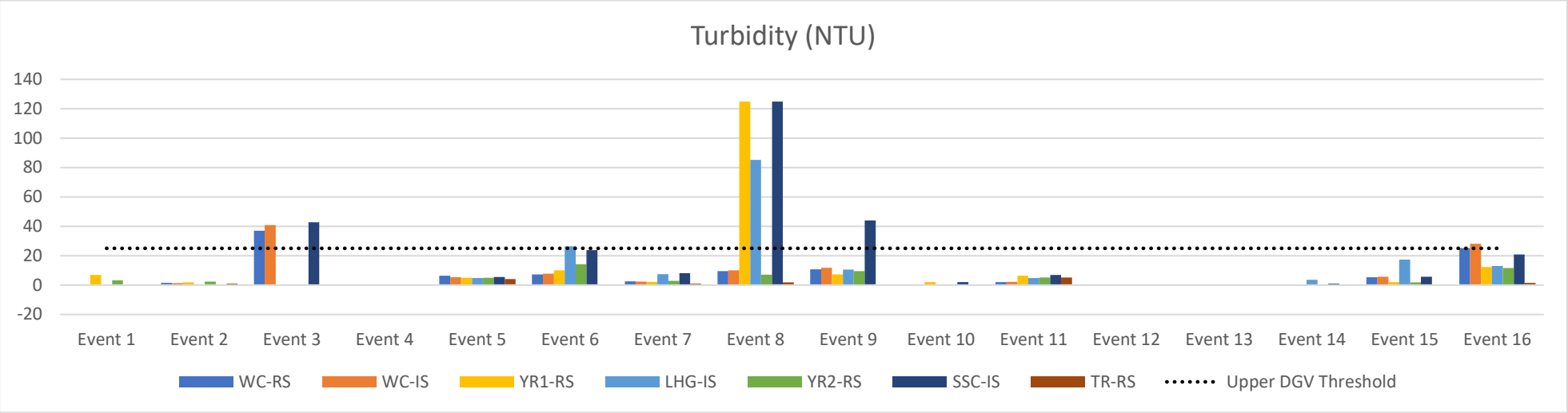

Figure 3-14 Turbidity (NTU) for the Talbingo Reservoir catchment

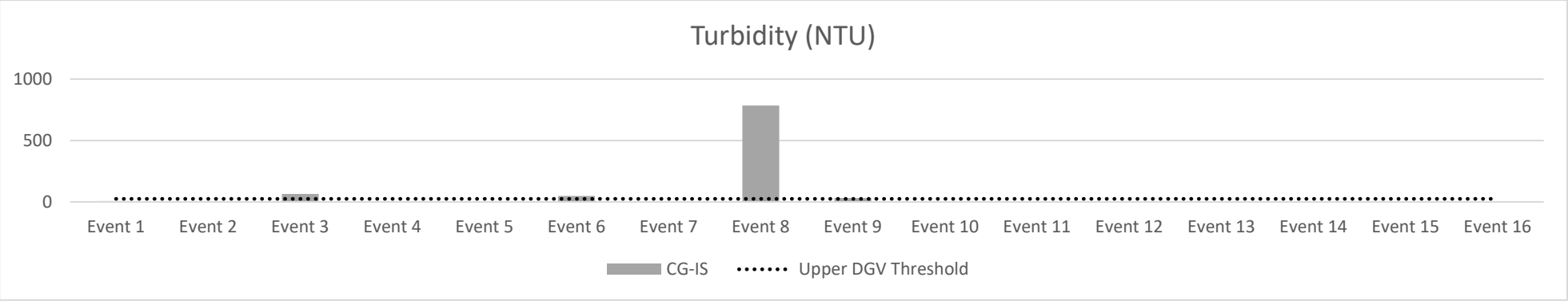

Figure 3-15 Turbidity (NTU) for CG-IS, within the Talbingo Reservoir catchment

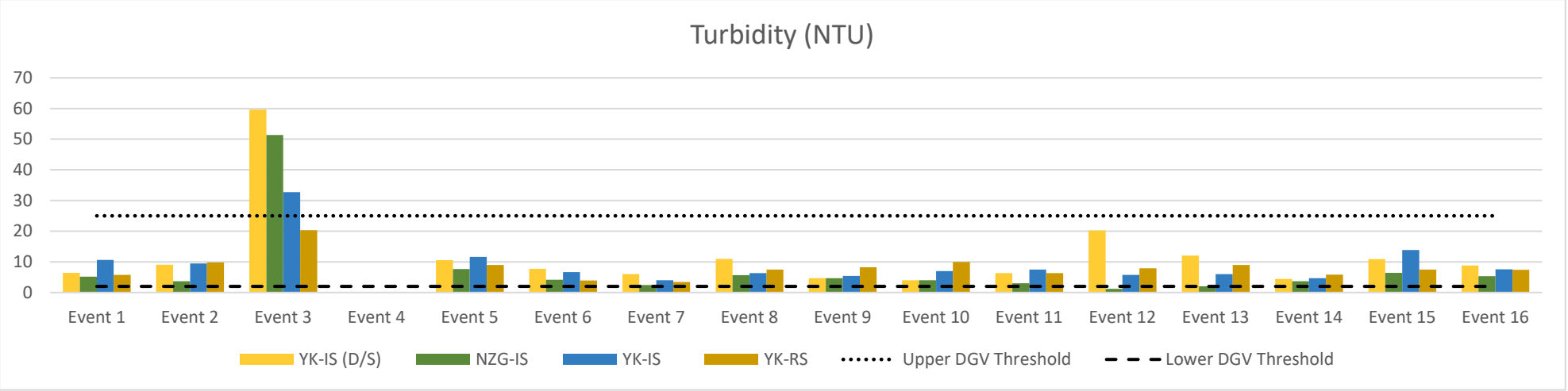

Figure 3-16 Turbidity (NTU) for the Yorkers Creek catchment

Results for total suspended solids (TSS) within the Talbingo Reservoir catchment during Event 16 have notably increased since Event 15, refer to Figure 3-17. Total suspended solids have notably decreased at CG-IS for Event 16, refer to Figure 3-18. Total suspended solids have increase at YK-RS and YK-IS (D/S) and remained relatively consistent at YK-IS and NZG-IS, when compared with the results of Event 15, refer to Figure 3-19.

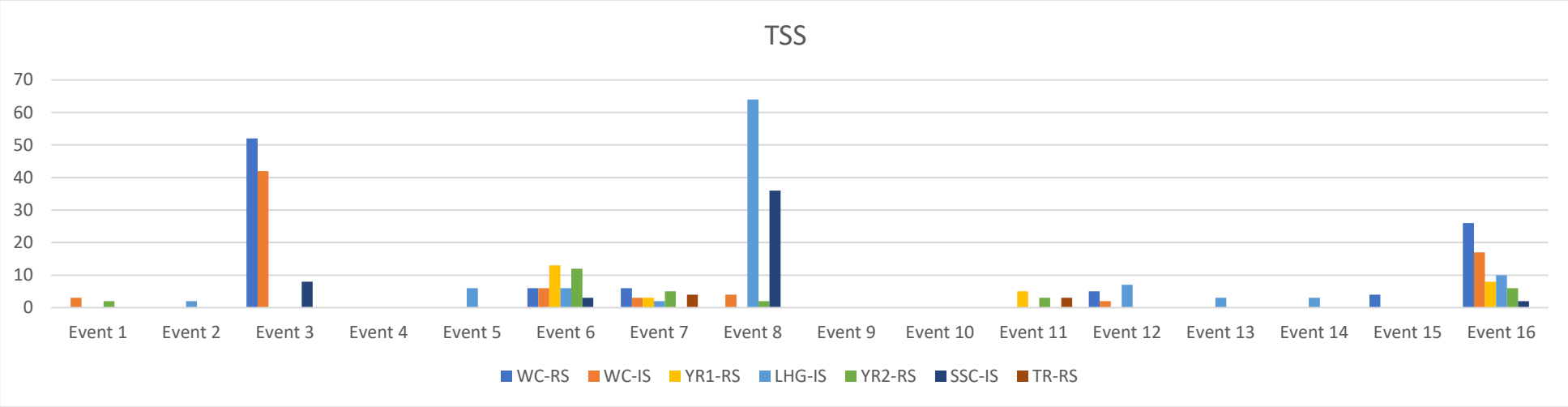

Figure 3-17 Total Suspended Solids for the Talbingo Reservoir catchment

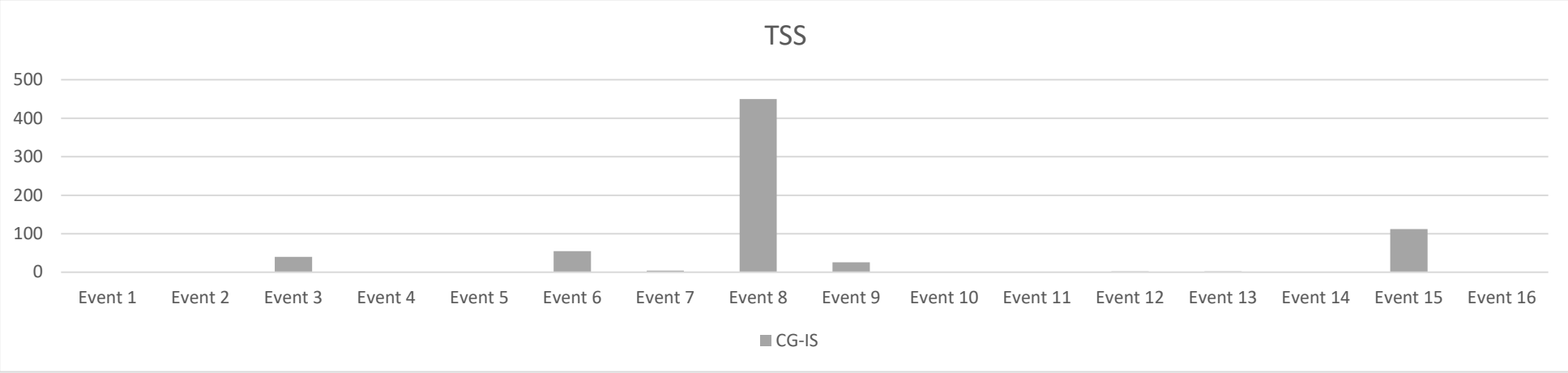

Figure 3-18 Total Suspended Solids for CG-IS, within the Talbingo Reservoir catchment

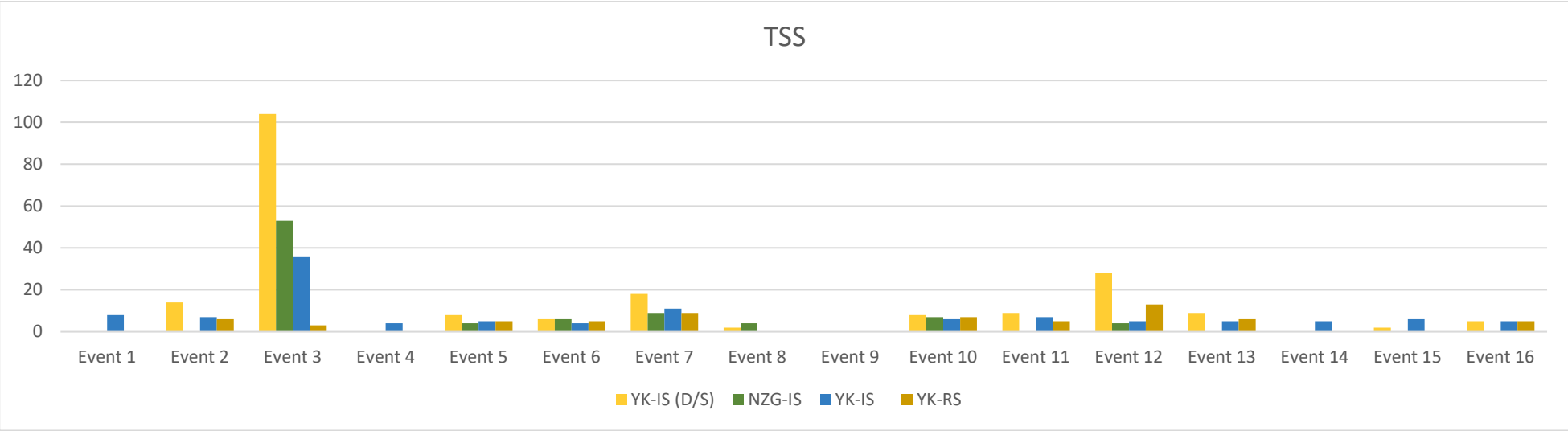

Figure 3-19 Total Suspended Solids for the Yorkers Creek catchment

Values of pH for the Talbingo Reservoir catchment during Event 15 have remained relatively consistent with Event 15. All sites had values of pH within the DGV range (6.5 – 8 pH units), refer to Figure 3-20.

Values of pH for the Yorkers Creek catchment have generally decreased since Event 15, refer to Figure 3-21. Readings for YK-IS (D/S) (6.44 pH units), YK-IS (6.12 pH units) and YK-RS (6.2 pH units) were below the lower DGV range (6.5 pH units).

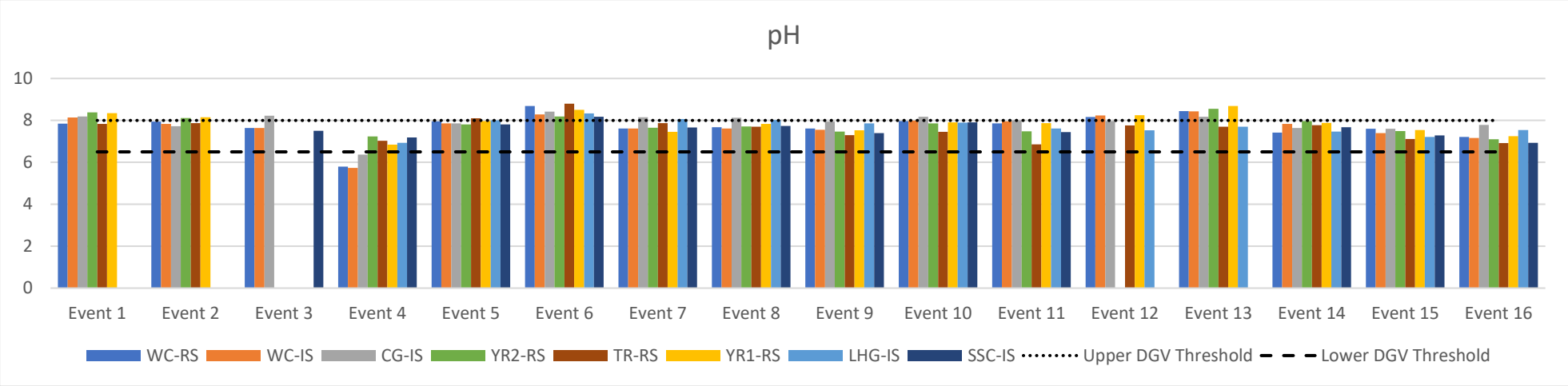

Figure 3-20 Potential of Hydrogen (pH) for Talbingo Reservoir catchment

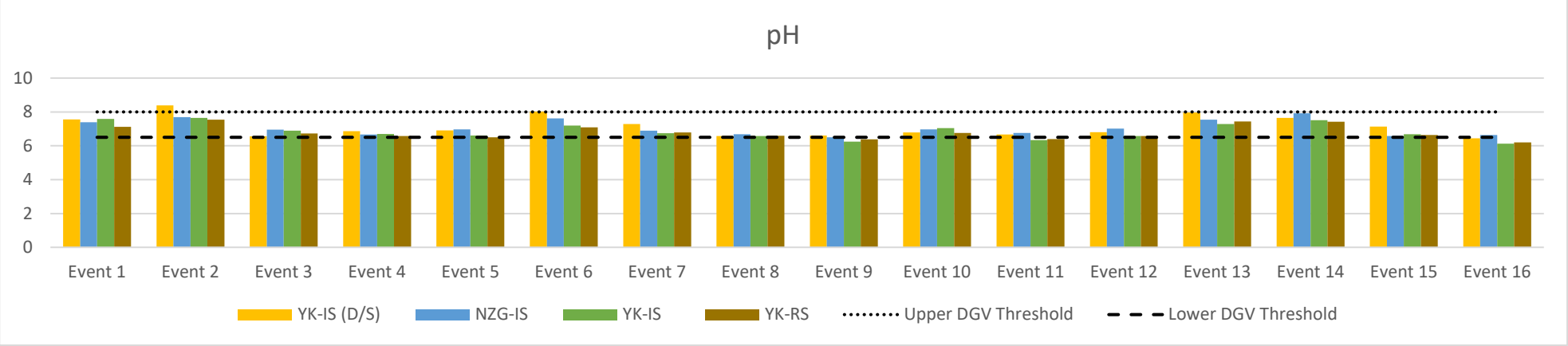

Figure 3-21 Potential of Hydrogen (pH) for Yorkers Creek catchment

The values for oxygen redox potential within the Talbingo Reservoir catchment have generally increased since Event 15 except for WC-RS, YR1-RS and TR-RS, which have slightly decreased, refer to Figure 3-22. Oxygen redox potential has remained relatively consistent within the Yorkers Creek catchment, refer to Figure 3-23.

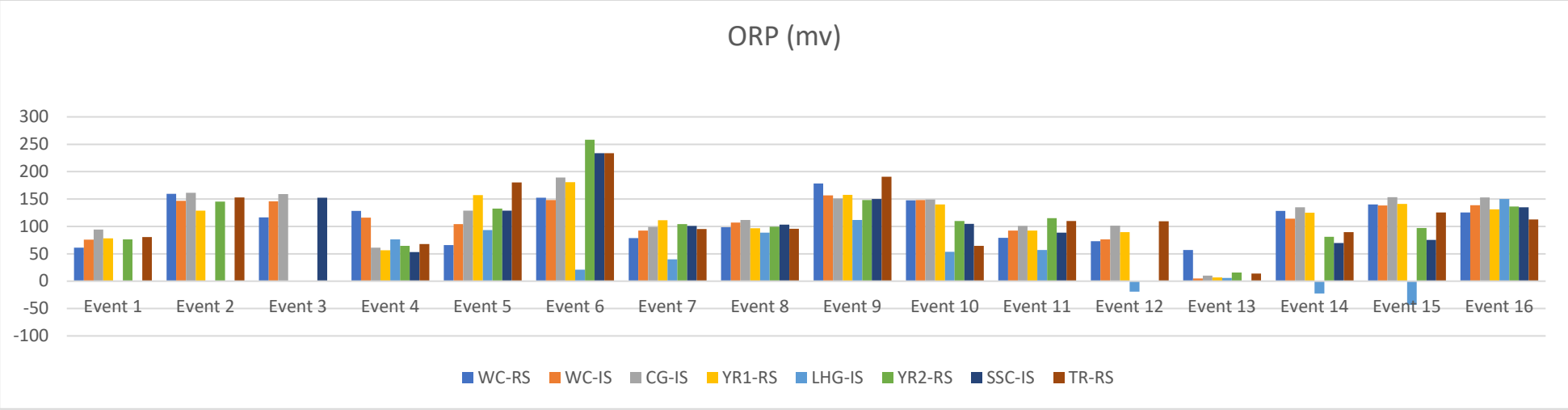

Figure 3-22 Oxygen Redox Potential (ORP) for Talbingo Reservoir catchment

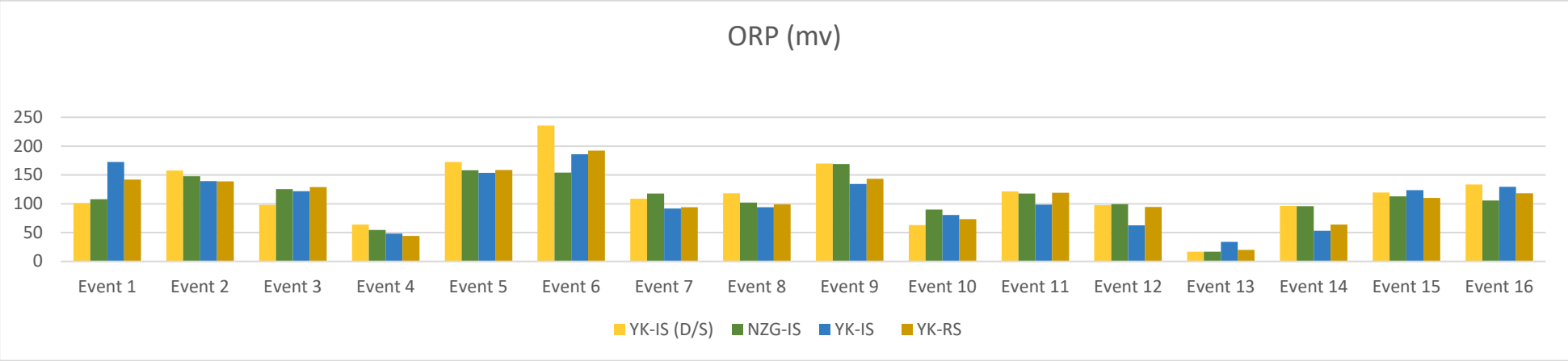

Figure 3-23 Oxygen Redox Potential (ORP) for Yorkers Creek catchment

Nitrogen Oxides (mg/L) were below the LOR for the Talbingo Reservoir and Yorkers Creek catchments, refer to Figure 3-24 and Figure 3-25. This has been a consistent trend since Event 3.

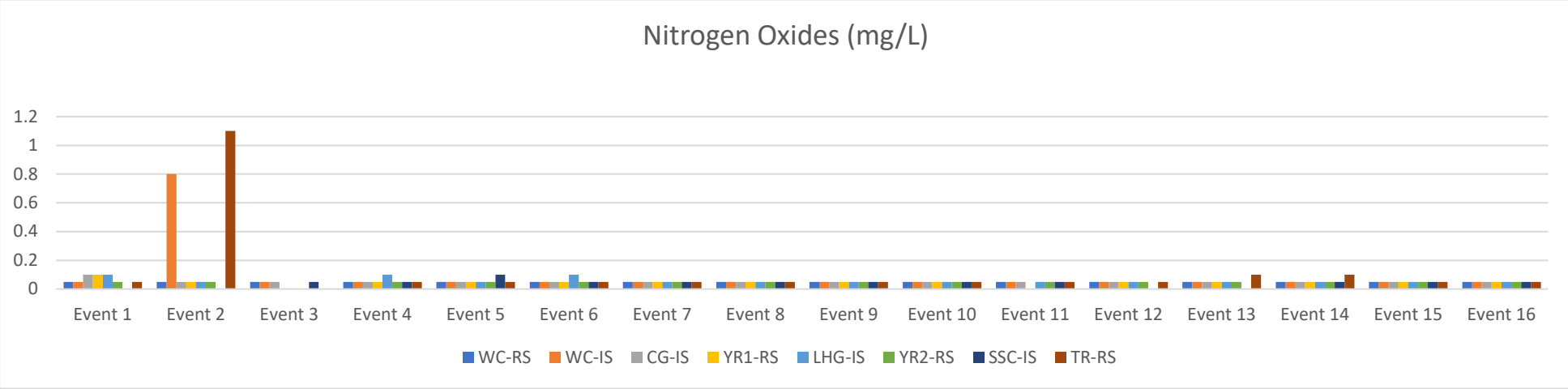

Figure 3-24 Nitrogen Oxides (mg/L) for the Talbingo Reservoir catchment

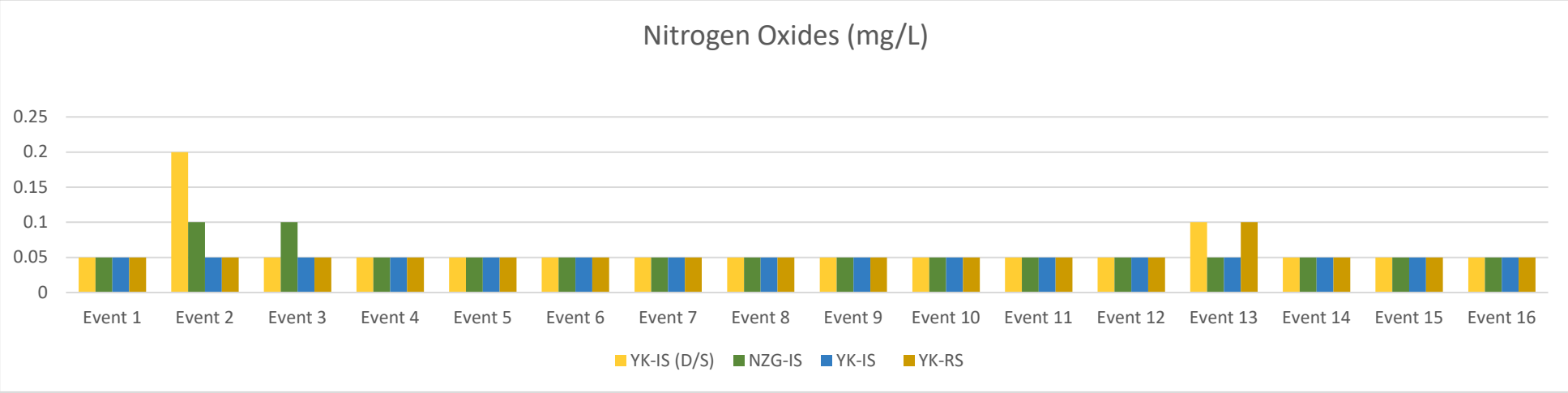

Figure 3-25 Nitrogen Oxides (mg/L) for the Yorkers Creek catchment

Reactive Phosphorous (mg/L) has increased across the Talbingo Reservoir catchment, refer to Figure 3-26. Reactive Phosphorous returned results of 0.04 mg/L at all sites within the Yorkers Creek catchment, increasing from 0.02 mg/L during Event 15, refer to Figure 3-27.

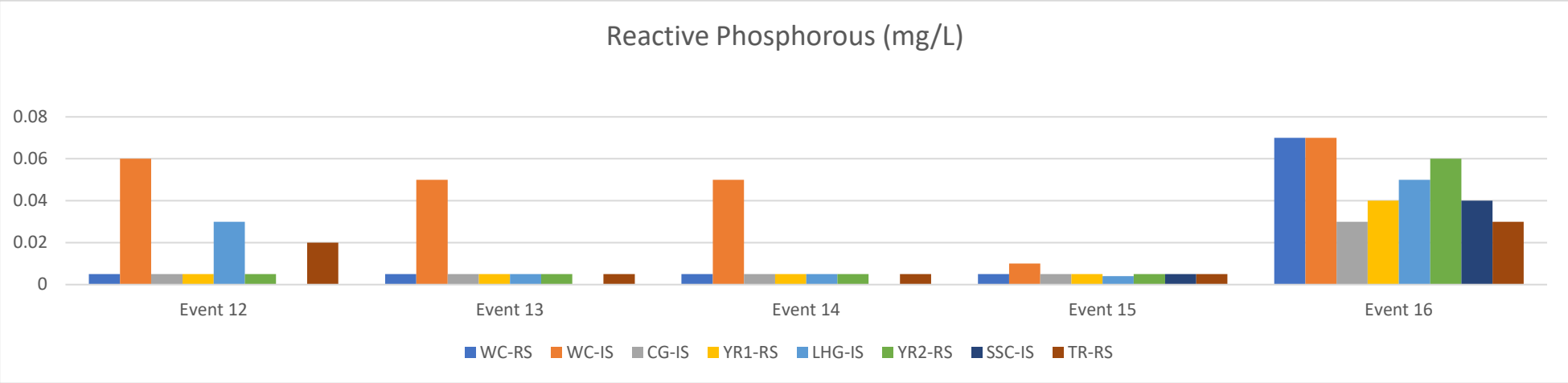

Figure 3-26 Reactive Phosphorous (mg/L) for the Talbingo Reservoir catchment

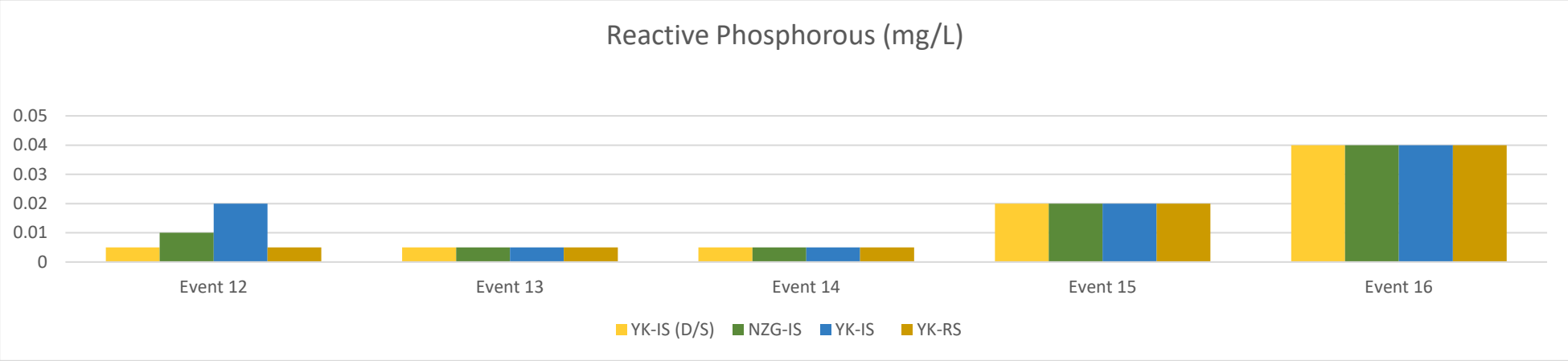

Figure 3-27 Reactive Phosphorous (mg/L) for the Yorkers Creek catchment

Total Hardness ($CaCO_3$, mg/L) within the Talbingo Reservoir catchment for Event 16 varied from very soft at TR-RS (8 mg/L) to hard at LHG-IS (280 mg/L), refer to Figure 3-28. Total Hardness ($CaCO_3$, mg/L) within the Yorkers Creek catchment was generally very soft, ranging from 9 -23 mg/L, refer to Figure 3-29.

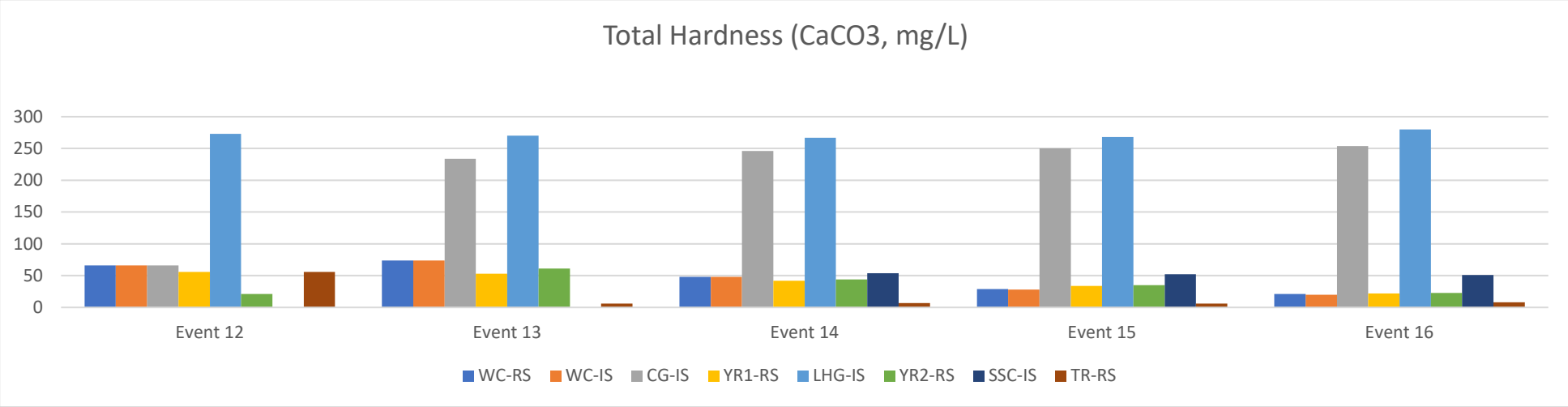

Figure 3-28 Total Hardness ($CaCO_3$) for the Talbingo Reservoir catchment

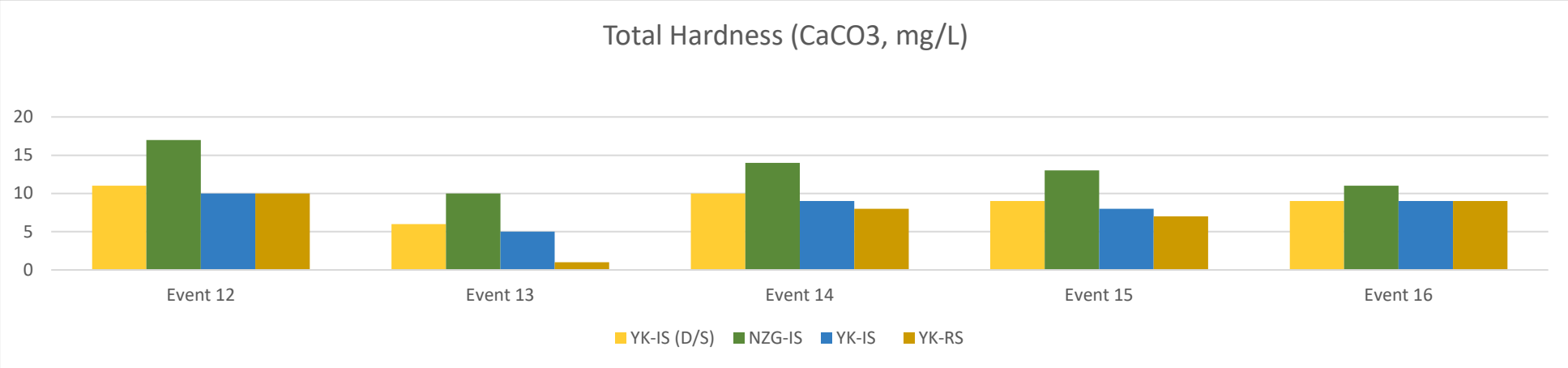

Figure 3-29 Total Hardness ($CaCO_3$) for the Yorkers Creek catchment

Results for Total Kjedahl Nitrogen (TKN, mg/L) were below the LOR for the Talbingo Reservoir and Yorkers Creek catchments, refer to Figure 3-30 and Figure 3-31.

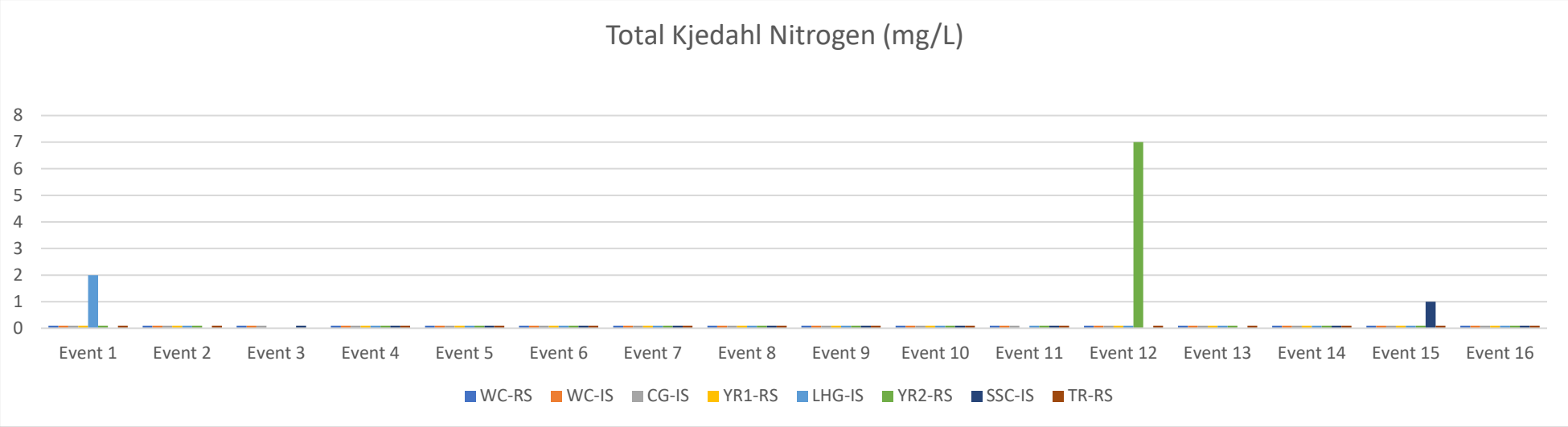

Figure 3-30 Total Kjedahl Nitrogen (TKN) for the Talbingo Reservoir catchment

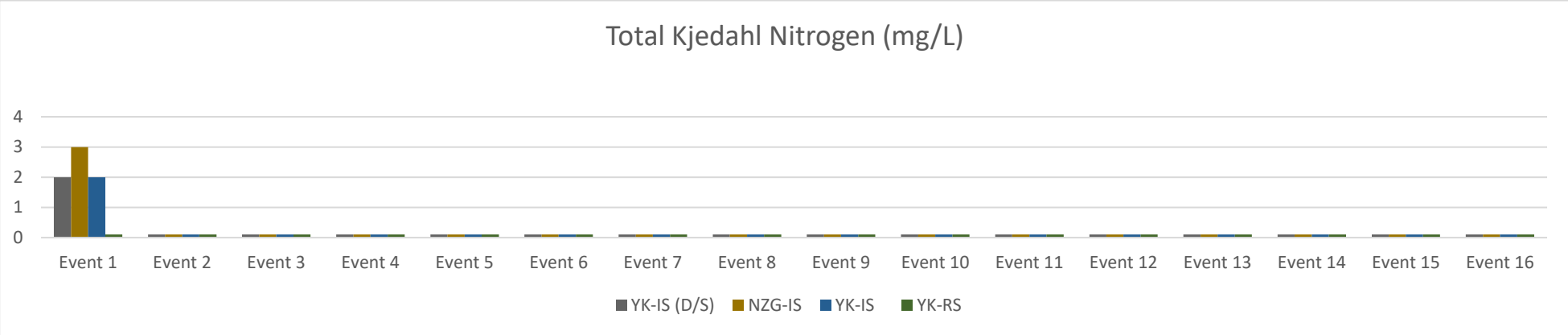

Figure 3-31 Total Kjedahl Nitrogen (TKN) for the Yorkers Creek catchment

Ammonia (mg/L) levels were below the LOR for all sites within the Talbingo and Yorkers Creek catchments for Event 16, refer to Figure 3-32 and Figure 3-33

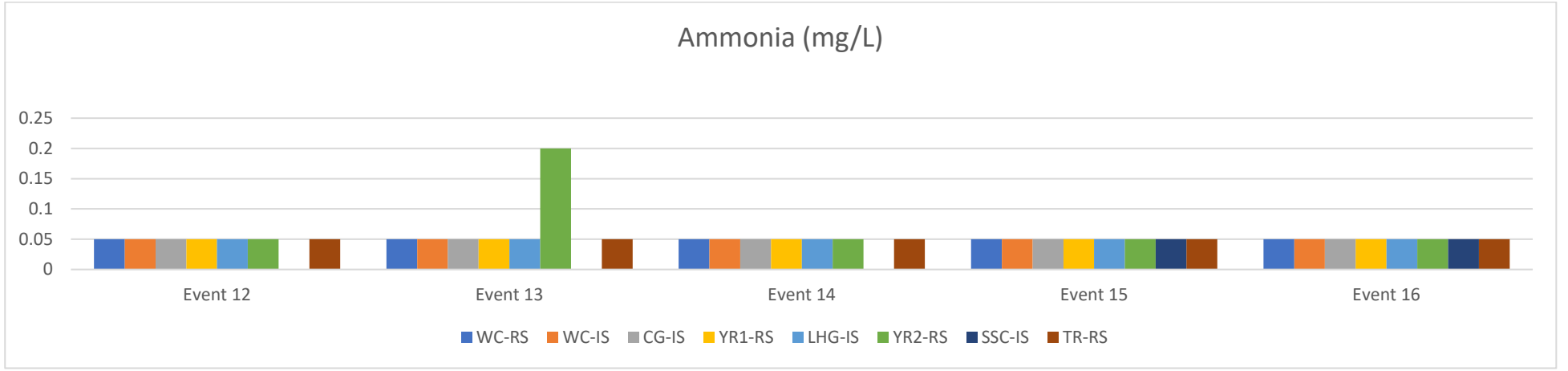

Figure 3-32 Ammonia (mg/L) for the Talbingo Reservoir catchment

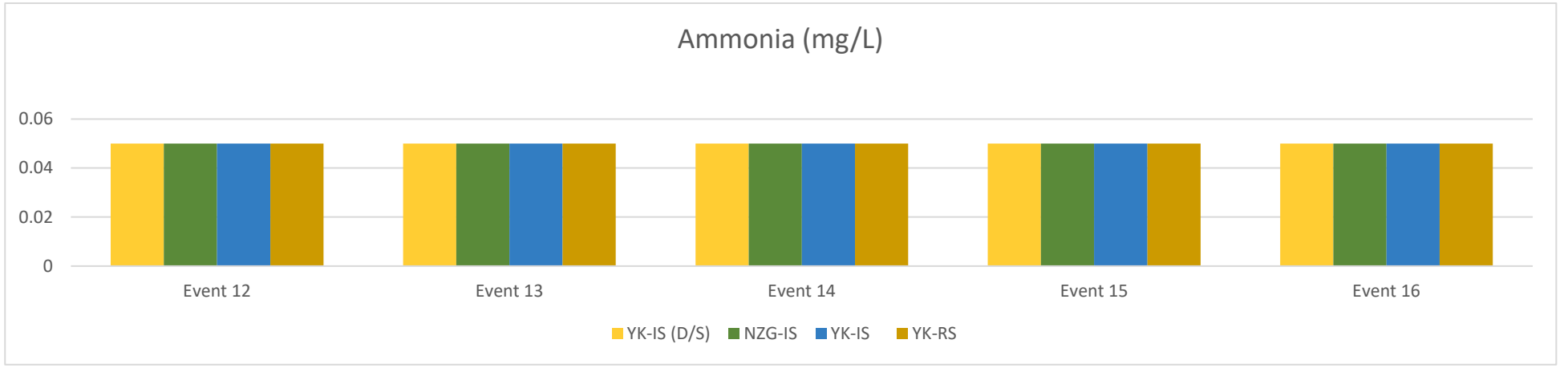

Figure 3-33 Ammonia (mg/L) for the Yorkers Creek catchment

3.1.2. Quality Assurance / Quality Control

A Quality Assurance and Quality Control (QA/QC) program was undertaken as part of this investigation including:

- A field duplicate sample, at a rate of one per 20 samples, was taken (DUP01) from the WQM site WC-IS on 28 June 2023. DUP01 was analysed for metals and metalloids. The duplicate sample has been compared against the WC-IS sample by Relative Percentage Difference (RPD) and has returned within an acceptable range (less than 30% for inorganic or less than 5 times the laboratory LOR.
- A water blank was supplied by the laboratory. The water blank sample was analysed for metals and metalloids. There were no exceedances of the sample results above the LORs.

NGH consider the QA/QC program to have been effective and the data reliable and representative to achieve the objectives of the investigation.

Refer to Appendix C for the laboratory analysis certificate, Appendix D for the RPD Table and Appendix E for the calibration certificates.

4. Conclusion

Water temperatures for Event 16 have generally decreased across the sites, when compared to water temperatures for Event 15. This can be attributed to seasonal changes.

Results for Event 16 indicate there has been a notable increase in DO (%) and DO (ppm) across both catchments.

Specific conductance (µS/cm) has consistently decreased across both catchments since Event 14.

Increased turbidity (NTU) readings were recorded within the Talbingo Reservoir catchment, while a decrease in turbidity was recorded within the Yorker's Creek catchment.

Results for ORP and TSS have increased within the Talbingo Reservoir catchment, when compared to previous events. In comparison, results for ORP and TSS have remained relatively consistent within the Yorkers Creek catchment, with YK-RS and YK-IS (D/S) registering minor increases.

pH has remained relatively consistent within the Talbingo Reservoir catchment, while a decrease in pH units was observed within the Yorkers Creek catchment. Readings for YK-IS (D/S) (6.44 pH units), YK-IS (6.12 pH units) and YK-RS (6.2 pH units) were below the lower DGV range (6.5 pH units).

Results for Nitrogen Oxides, TKN and ammonia were below the LOR for both catchments, which has been a consistent trend across sampling events.

Total Hardness ($CaCO_3$) remained consistent within the Talbingo Reservoir catchment for Event 15, varying from very soft at TR-RS (8 mg/L) to hard at LHG-IS (280 mg/L). Similarly, total Hardness ($CaCO_3$) remained consistent within the Yorkers Creek catchment, ranging from 9 – 23 mg/L (very soft).

Laboratory results for Event 15 were generally consistent with the results of the previous monitoring events, with the majority of analytes reported below the Limit of Reporting. Results exceeded the DGV for:

- Aluminium (0.027 mg/L) at all sites
- Iron (0.3 mg/L) at WC-RS, WC-IS and SSC-IS
- Zinc (0.0024 mg/L) at CG-IS, LHG-IS, YK-IS (D/S) and SSC-IS
- Copper (0.001 mg/L) at LHG-IS and YK-IS (D/S)
- Reactive phosphorous (0.015 mg/L) at all sites except YR1-RS
- Total phosphorous (0.02 mg/L) at WC-RS, WC-IS, YK-RS and TR-RS
- Total suspended solids (0.2 mg/L) at WC-RS, LHG-IS, WC-IS, YK-IS (D/S), YK-IS, YR1-RS, YR2-RS and SSC-IS
- Total dissolved solids were elevated at CG-IS and LHG-IS, which is a pattern that has carried through all events.

All results and statistics are provided in Appendix A.

5. References

Jacobs Pty Ltd. 2020. *Snowy 2.0 Transmission Connection Project EIS.*

NGH Pty Ltd. 2022. *Pre-construction Water Quality Monitoring Program and Methodology*.

NGH Pty Ltd. 2022a. *Pre-construction Water Quality Monitoring Report: Event 1 April 2022*.

NGH Pty Ltd. 2022b. *Pre-construction Water Quality Monitoring Report: Event 2 April 2022*.

NGH Pty Ltd. 2022c. *Pre-construction Water Quality Monitoring Report: Event 3 May and June 2022*.

NGH Pty Ltd. 2022d. *Pre-construction Water Quality Monitoring Report: Event 4 June 2022*.

NGH Pty Ltd. 2022e. *Pre-construction Water Quality Monitoring Report: Event 5 July 2022*.

NGH Pty Ltd. 2022f. *Pre-construction Water Quality Monitoring Report: Event 6 August 2022*.

NGH Pty Ltd. 2022g. *Pre-construction Water Quality Monitoring Report: Event 7 October 2022.*

NGH Pty Ltd. 2022h. *Pre-construction Water Quality Monitoring Report: Event 8 October 2022.*

NGH Pty Ltd. 2022i. *Pre-construction Water Quality Monitoring Report: Event 9 November 2022.*

NGH Pty Ltd. 2022j. *Pre-construction Water Quality Monitoring Report: Event 10 December 2022.*

NGH Pty Ltd. 2023a. *Pre-construction Water Quality Monitoring Report: Event 11 January 2023.*

NGH Pty Ltd. 2023b. *Pre- construction Water Quality Monitoring Report: Event 12 February 2023.*

NGH Pty Ltd. 2023c. *Pre- construction Water Quality Monitoring Report: Event 13 March 2023.*

NGH Pty Ltd. 2023d. *Pre- construction Water Quality Monitoring Report: Event 14 April 2023.*

NGH Pty Ltd. 2023e. *Pre- construction Water Quality Monitoring Report: Event 15 June 2023.*

TransGrid. 2021a. *Snowy 2.0 Transmission Connection Project Submissions Report.*

TransGrid. 2021b. *Snowy 2.0 Transmission Connection Project Amendment Report*.

APPENDIX A EVENT DATA TABLE

22-013 Pre-construction WQM		Sheen/ oil/ grease	℃ Temp. ( )	Dissolved Oxygen (DO %)	DO (ppm)	Specific EC (SPC uS/cm)	EC (uS/cm)	pH	Redox (mV)	Turbidity (NTU)	Al (mg/L)	As (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Cyanide (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Hg (mg/L)	Ni (mg/L)	TN (mg/L)	TP (mg/L)	Ag (mg/L)	Zn (mg/L)	Ammonia (mg/L)	Nitrogen Oxides	Reactive Phosphorous	Total Hardness (CaCO3)	Total Kjedahl Nitrogen (TKN)	TDS mg/L	TSS (mg/L)
DGV (Default Guideline Value)		No	-	90-110	-	-	30-350	6.5-8	-	2-25	0.027	0.0008	0.00006	0.00001	0.001	0.004	0.3	0.001	1.2	0.00006	0.008	0.25	0.02	0.00002	0.0024	0.013	0.015	0.015	-		-	0.2
WC-RS	Event 1	No	14.2	90.5	9.28	126.8	100.7	7.85	61.2	0.37	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.011	0.000015	0.0005	3	0.005	0.00001	0.001		0.05			0.1	12	0.1
	Event 2	but on sedi	12.4	73.5	7.84	109	83.1	7.95	159.4	1.49	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	1	0.1
	Event 3	No	9.2	61.3	7.05	151	36	7.64	116.3	36.96	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	50	52
	Event 4	No	7.3	75.1	12.78	128.9	35.3	5.8	128.4		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	19	0.1
	Event 5	No	7.8	98.9	11.76	88	59	7.96	65.8	6.45	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	56	0.1
	Event 6	No	9.3	79.86	9.74	89.6	62.7	8.69	152.6	7.15	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	44	6
	Event 7	no	13.2	74.9	7.87	83.5	64.6	7.62	78.7	2.62	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	53	6
	Event 8	no	13.1	74.5	7.84	71.8	55.4	7.67	98.4	9.52	0.079	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.08	0.00001	0.001		0.05			0.1	39	0.1
	Event 9	No	11.9	102.1	11.02	90	67.5	7.62	178.4	10.72	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	24	0.1
	Event 10	No	11.7		9.12		79.5	7.97	147.8	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.1	0.005	0.00001	0.019		0.05			0.1	74	0.1
	Event 11	No	18.9	100.6	8.7	94.9	83.9	7.86	79.1	1.94	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	52	0.1
	Event 12	No	21.3	106.8	8.92	124.9	116.1	8.16	73.1	0.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.005	66	0.1	1	5
	Event 13	No	19.4		9.11		145.8	8.44	57	0.05	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.003	0.05	0.05	0.005	74	0.1	129	0.1
	Event 14	No	12	102	11	124.1	93.2	7.42	128.3	0.08	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.1	0.5	0.00001	0.002	0.05	0.05	0.005	48	0.1	79	0.1
	Event 15	No	9.7	45.2	5.13	75.6		7.6	139.9	5.39	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.001	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.005	29	0.1	1	4
	Event 16	No	8.3	91.8	10.8	51.3	34.9	7.21	125.5	25.22	0.75	0.00015	0.00001	0.000005	0.0001	0.001	0.46	0.0005	0.004	0.000015	0.0005	0.1	0.05	0.00001	0.002	0.05	0.05	0.07	21	0.1	1	26
	Min		7.30	45.20	5.13	51.30	34.90	5.80	57.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	21.00	0.10	1.00	0.10
	Max		21.30	106.80	12.78	151.00	145.80	8.69	178.40	36.96	0.75	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.01	0.00	0.00	3.00	0.50	0.00	0.02	0.05	0.05	0.07	74.00	0.10	129.00	52.00
	Mean		12.48	84.08	9.25	100.67	74.51	7.72	111.87	7.21	0.10	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.28	0.05	0.00	0.00	0.05	0.05	0.02	47.60	0.10	39.69	6.25
	Count		16.00	14.00	16.00	14.00	15.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	5.00	16.00	16.00	16.00
	St. Dev		4.22	17.92	1.93	27.52	31.07	0.63	38.93	10.57	0.19	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.73	0.12	0.00	0.00	0.00	0.00	0.03	22.85	0.00	35.45	13.83
WC-IS	Event 1	No	14.3	90.6	9.28	126.7	100.8	8.14	76	0.32	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.011	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	80	3
	Event 2	No	12.5	69.9	7.44	109	83.3	7.84	146.8	1.39	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.8	0.005	0.00001	0.001		0.8			0.1	63	0.1
	Event 3	No	9.3	61.2	7.03	48	33	7.64	145.8	40.77	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	41	42
	Event 4	No	7.4	43.7	12.55	52.3	35	5.73	115.9		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	27	0.1
	Event 5	No	7.9	96.4	11.45	87	59	7.86	104.3	5.24	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	48	0.1
	Event 6	No	9.3	72.36	9.55	86.6	60.3	8.28	148	7.78	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	47	6
	Event 7	No	13.3	75.1	7.86	83.8	65.1	7.61	92.6	2.41	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	4	3
	Event 8	No	13.1	74.4	7.82	71.7	55.4	7.62	107.1	10.1	0.076	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	1	4
	Event 9	No	12	102.2	11.02	88.7	66.6	7.55	156.8	11.79	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	6	0.1
	Event 10	No	11.9		15.88		79.2	7.99	148	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.1	0.005	0.00001	0.02		0.05			0.1	68	0.1
	Event 11	No	19	105.8	9.15	94	83.2	7.96	92.6	2.15	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	43	0.1
	Event 12	No	21.7	108.2	8.98	125	117.1	8.24	76.2	0.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.02	0.05	0.05	0.06	66	0.1	80	2
	Event 13	No	19.6		8.85		146.1	8.43	5	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.003	0.05	0.05	0.05	74	0.1	94	0.1
	Event 14	No	12.1	102.7	11.03	124	93.5	7.84	114.1	0.03	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.002	0.05	0.05	0.05	48	0.1	57	0.1
	Event 15	No	9.8	44	4.99	75.3		7.39	138.4	5.64	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.001	0.000015	0.0005	0.1	0.13	0.00001	0.001	0.05	0.05	0.01	28	0.1	1	0.1
	Event 16	No	8.3	92.1	10.82	51.2	34.9	7.16	138.9	28.1	0.67	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0005	0.004	0.000015	0.0005	0.1	0.15	0.00001	0.001	0.05	0.05	0.07	20	0.1	9	17
	Min		7.40	43.70	4.99	48.00	33.00	5.73	5.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	20.00	0.10	1.00	0.10
	Max		21.70	108.20	15.88	126.70	146.10	8.43	156.80	40.77	0.67	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.01	0.00	0.00	0.80	0.15	0.00	0.02	0.05	0.80	0.07	74.00	0.10	94.00	42.00
	Mean		12.59	81.33	9.61	87.38	74.17	7.71	112.91	7.73	0.09	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.14	0.03	0.00	0.00	0.05	0.10	0.05	47.20	0.10	41.81	4.87
	Count		16.00	14.00	16.00	14.00	15.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	5.00	16.00	16.00	16.00
	St. Dev		4.28	21.76	2.54	26.76	31.60	0.63	39.36	11.74	0.18	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.18	0.04	0.00	0.01	0.00	0.19	0.02	23.35	0.00	31.00	10.79
CG-IS	Event 1	No	14.1	91.8	9.43	536	423.6	8.19	94.3	6.47	0.01	0.00015	0.00001	0.000005	0.005	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	317	0.1
	Event 2	No	13.3	71.6	7.48	517	401.2	7.73	161.4	1.36	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	293	0.1
	Event 3	No	9.6	62.1	7.07	447	315	8.22	159.2	65.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	270	40
	Event 4	No	8.6	44.57	12.06	321.3	349	6.37	61.1		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.05	0.00001	0.001		0.05			0.1	266	0.1
	Event 5	No	9.1	96.1	11.07	473	305	7.86	128.7	4.22	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	293	0.1
	Event 6	No	10.1	73.2	9.4	583	417.2	8.42	189.2	48.5	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	293	55
	Event 7	No	13.6	75.5	7.84	538	420.8	8.15	98.8	3.75	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	243	4
	Event 8	No	13.9	74.5	7.68	448.3	353.6	8.13	111.9	785.48	1.06	0.00015	0.00001	0.000005	0.0001	0.001	0.52	0.0005	0.011	0.000015	0.0005	0.1	0.35	0.00001	0.002		0.05			0.1	277	450
	Event 9	No	12.9	102.9	10.86	384	294.9	7.95	151.2	32.04	0.44	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.002	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	232	26
	Event 10	No	12.3		8.87		415.7	8.18	149.1	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.042		0.05			0.1	299	0.1
	Event 11	No	16.6	101.2	9.17	375.2	315.2	8	101.1	1.2	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.01	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.004		0.05			0.1	288	0.1
	Event 12	No	20.1	116.9	9.98	438.4	397.7	7.97	101.5	0.1	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.004	0.05	0.05	0.005	66	0.1	292	2
	Event 13	No	17.5		9.56		404.9	8.18	10	0.05	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	2	0.005	0.00001	0.005	0.05	0.05	0.005	234	0.1	271	2
	Event 14	No	13.3	102.9	10.75	541	420.2	7.64	135	0.01	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	2	0.005	0.00001	0.004	0.05	0.05	0.005	246	0.1	271	0.1
	Event 15	No	10.8	43.9	4.86	479.3		7.6	153.2	0.001	0.005	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.1	0.00001	0.004	0.05	0.05	0.005	250	0.1	161	112
	Event 16	No	9.2	92.6	10.64	487.5	340.3	7.78	152.8	2.65	0.16	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.0005	0.000015	0.002	0.1	0.005	0.00001	0.005	0.05	0.05	0.03	254	0.1	242	0.1
	Min		8.60	43.90	4.86	321.30	294.90	6.37	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	66.00	0.10	161.00	0.10
	Max		20.10	116.90	12.06	583.00	423.60	8.42	189.20	785.48	1.06	0.00	0.00	0.00	0.01	0.00	0.52	0.00	0.01	0.00	0.00	2.00	0.35	0.00	0.04	0.05	0.10	0.03	254.00	0.10	317.00	450.00
	Mean		12.81	82.13	9.17	469.21	371.62	7.90	122.41	63.40	0.13	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.34	0.04	0.00	0.00	0.05	0.05	0.01	210.00	0.10	269.25	43.24
	Count		16.00	14.00	16.00	14.00	15.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	5.00	16.00	16.00	16.00
	St. Dev		3.27	22.19	1.83	73.32	48.33	0.47	44.49	200.78	0.27	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.65	0.09	0.00	0.01	0.00	0.01	0.01	80.85	0.00	36.82	112.68
YR1-RS	Event 1	No	14.9	92.2	9.31	110.7	89.3	8.35	78.3	6.94	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	69	0.1
	Event 2	No	12.7	73.8	7.83	104	79.2	8.15	128.8	1.85	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	50	0.1
	Event 3	No sample																														
	Event 4	No	6.5	24.6	13.05	34.7	36.9	6.84	56.3		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	33	0.1
	Event 5	No	7.9	102.6	12.18	82	59	7.97	157.1	5	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	53	0.1
	Event 6	No	8.8	73.3	10.59	59.7	41.2	8.5	180.9	10	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	36	13
	Event 7	No	12.5	75.5	8.03	69.6	53.1	7.46	111.4	2.19	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	38	3
	Event 8	No	13.1	74.8	7.86	62.9	48.6	7.83	96.6	124.93	0.088	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	35	0.1
	Event 9	No	12.2	102.7	11.02	70.8	53.5	7.53	157.4	7.3	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	30	0.1
	Event 10	No	11.6		9.68		53.1	7.91	140.3	2	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.15	0.0005	0.003	0.000015	0.0005	0.1	0.01	0.00001	0.006		0.05			0.1	67	0.1
	Event 11	No	19.8	101.6	8.64	70.5	63.5	7.87	92.3	6.31	0.22	0.00015	0.00001	0.000005	0.0001	0.001	0.16	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002						50	5
	Event 12	No	22.1	109.4	9.01	109.7	103.7	8.25	89.5	0.1	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	56	0.1	12	0.1
	Event 13	No	20.3		7.73		124.6	8.69	7	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.01	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	53	0.1	73	0.1
	Event 14	No	12.9	103.6	10.93	111.7	85.9	7.88	124.8	-0.1	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.04	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.005	42	0.1	58	0.1
	Event 15	No	9.3	44.1	5	86.3		7.54	141	1.97	0.08	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.001	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.005	34	0.1	21	0.1
	Event 16	No	7.8	92.7	11.04	55.6	37.3	7.25	131.1	12.25	0.47	0.00015	0.00001	0.000005	0.0001	0.001	0.3	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.04	22	0.1	6	8
	Min		6.50	24.60	5.00	34.70	36.90	6.84	7.00	-0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	22.00	0.10	6.00	0.10
	Max		22.10	109.40	13.05	111.70	124.60	8.69	180.90	124.93	0.47	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.10	0.03	0.00	0.01	0.05	0.10	0.04	56.00	0.10	73.00	13.00
	Mean		12.83	82.38	9.46	79.09	66.35	7.87	112.85	12.91	0.09	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	41.40	0.10	42.07	2.01
	Count		15.00	13.00	15.00	13.00	14.00	15.00	15.00	14.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	5.00	14.00	5.00	5.00	14.00	15.00	15.00
	St. Dev		4.74	25.23	2.07	24.28	26.46	0.49	44.46	32.47	0.13	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	13.96	0.00	20.32	3.84
LHG-IS	Event 1	No									0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.001	0.000015	0.0005	2	0.005	0.00001	0.001		0.1			2	348	0.1
	Event 2	No									0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	353	2
	Event 3	No sample																														
	Event 4	No	9.9	0	10.71	0	366.9	6.93	76.3		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.1			0.1	295	0.1
	Event 5	No	9.3	97.8	11.22	434	304	8.01	93.1	4.75	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	319	6
	Event 6	No	10.3	49.9	5.59	445.4	320.5	8.34	20.9	26.33	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	268	6
	Event 7	No	13.5	72.4	7.54	476.2	371.3	8.07	39.9	7.45	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	271	2
	Event 8	No	13.9	72	7.43	429.4	338.3	8.02	88.4	85.15	0.41	0.00015	0.00001	0.000005	0.0001	0.001	0.11	0.0005	0.005	0.000015	0.0005	0.1	0.07	0.00001	0.002		0.05			0.1	273	64
	Event 9	No	13.1	100.5	10.55	340.6	263.3	7.86	111.7	10.46	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	200	0.1
	Event 10	No	12.4		10.31		397.9	7.89	53.5	0.05	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.1	0.0005	0.017	0.000015	0.0005	0.1	0.005	0.00001	0.005		0.05			0.1	310	0.1
	Event 11	No	16.1	85.2	7.8	357.9	297	7.62	56.9	4.82	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.005	0.000015	0.0005	0.1	0.005	0.00001	0.003		0.05			0.1	311	0.1
	Event 12	No	18.8	84.3	7.4	453.4	399.3	7.53	-19.1	0.1	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.13	0.0005	0.073	0.000015	0.0005	0.1	0.005	0.00001	0.004	0.05	0.05	0.03	273	0.1	280	7
	Event 13	No	17.1		6.45		445.6	7.7	6	0.05	0.13	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.08	0.000015	0.0005	0.1	0.02	0.00001	0.005	0.05	0.05	0.005	270	0.1	293	3
	Event 14	No	12.6	66.2	7.03	585	446.8	7.47	-22.7	3.65	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.13	0.0005	0.039	0.000015	0.0005	0.1	0.005	0.00001	0.004	0.05	0.05	0.005	267	0.1	293	3
	Event 15	No	9.8	44	5.04	522		7.21	-43.2	17.27	0.07	0.00015	0.00001	0.000005	0.002	0.001	0.04	0.0005	0.007	0.000015	0.0005	0.1	0.03	0.00001	0.004	0.05	0.05	0.004	268	0.1	316	0.1
	Event 16	No	9.2	88.9	10.2	376.6	263.2	7.54	149.8	13.03	0.38	0.00015	0.00001	0.000005	0.013	0.001	0.19	0.0005	0.013	0.000015	0.006	0.1	0.01	0.00001	0.008	0.05	0.05	0.05	280	0.1	228	10
	Min		9.20	0.00	5.04	0.00	263.20	6.93	-43.20	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.00	267.00	0.10	200.00	0.10
	Max		18.80	100.50	11.22	585.00	446.80	8.34	149.80	85.15	0.41	0.00	0.00	0.00	0.01	0.00	0.19	0.00	0.08	0.00	0.01	2.00	0.07	0.00	0.01	0.05	0.10	0.05	280.00	2.00	353.00	64.00
	Mean		12.77	69.20	8.25	401.86	351.18	7.71	47.04	14.43	0.10	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.02	0.00	0.00	0.23	0.01	0.00	0.00	0.05	0.06	0.02	271.60	0.23	290.53	6.91
	Count		13.00	11.00	13.00	11.00	12.00	13.00	13.00	12.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	5.00	15.00	5.00	5.00	15.00	15.00	15.00
	St. Dev		3.11	29.14	2.09	150.88	63.92	0.38	57.28	23.62	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.03	0.00	0.00	0.49	0.02	0.00	0.00	0.00	0.02	0.02	5.22	0.49	40.45	16.10
YR2-RS	Event 1	No	15.3	93.1	9.32	109.4	89.2	8.38	76.5	3.28	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	74	2
	Event 2	No	13	73.6	7.74	101	78.3	8.11	145.4	2.29	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	39	0.1
	Event 3	No sample																														
	Event 4	No	6.5	83.35	19.18	105.2	38.4	7.24	64.5		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	38	0.1
	Event 5	No	8.1	95.2	11.26	82	55	7.81	132.6	5.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	57	0.1
	Event 6	No	10.2	86.3	11.87	62	42.9	8.19	258.3	14.21	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	47	12
	Event 7	No	12.7	75.7	8.02	71.3	54.6	7.65	104.3	2.84	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	67	5
	Event 8	No	13.4	75.1	7.84	131.6	49.7	7.71	99.5	7.06	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	48	2
	Event 9	No	12.5	103	10.97	68.4	52.1	7.47	148.1	9.56	0.29	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	22	0.1
	Event 10	No	12.3		9.94		53.3	7.86	109.8	0.05	0.22	0.00015	0.00001	0.000005	0.0001	0.001	0.16	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.004		0.05			0.1	63	0.1
	Event 11	No	19.9	101.8	8.3	74.5	63.1	7.48	115	5.07	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	92	3
	Event 12	No	22.9	108.2	8.79	109.7	105			0.1	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	21	7	1	0.1
	Event 13	No	20.9		8.24		127.4	8.56	16	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.01	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.2	0.05	0.005	61	0.1	72	0.1
	Event 14	No	13.5	103	10.74	112.9	88	7.97	81.1	0.18	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.04	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.002	0.05	0.05	0.005	44	0.1	59	0.1
	Event 15	No	9.9	44.2	5	88.7		7.49	97.2	1.83	0.07	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.005	35	0.1	56	0.1
	Event 16	No	1.8	93.2	11.1	56.9	38.2	7.1	136.4	11.65	0.46	0.00015	0.00001	0.000005	0.0001	0.001	0.29	0.0005	0.003	0.000015	0.001	0.1	0.05	0.00001	0.002	0.05	0.05	0.06	23	0.1	11	6
	Min		1.80	44.20	5.00	56.90	38.20	7.10	16.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	21.00	0.10	1.00	0.10
	Max		22.90	108.20	19.18	131.60	127.40	8.56	258.30	14.21	0.46	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.10	0.05	0.00	0.00	0.20	0.05	0.06	61.00	7.00	92.00	12.00
	Mean		12.86	87.37	9.89	90.28	66.80	7.79	113.19	4.52	0.10	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.08	0.05	0.02	36.80	0.56	49.73	2.06
	Count		15.00	13.00	15.00	13.00	14.00	14.00	14.00	14.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	5.00	15.00	5.00	5.00	15.00	15.00	15.00
	St. Dev		5.50	17.36	3.15	23.04	26.89	0.42	54.74	4.57	0.13	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.07	0.00	0.02	16.44	1.78	24.54	3.36
SSC-IS	Event 1	No flow																														
	Event 2	No flow																														
	Event 3	No	10.4	61.4	6.87	108	78	7.5	152.2	42.72	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	84	8
	Event 4	No	8.6	61.4	12.09	108	96.9	7.19	53.1		0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	69	0.1
	Event 5	No	8.8	96.2	11.17	172	119	7.81	128.7	5.49	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.1			0.1	84	0.1
	Event 6	No	10.2	73	10.04	165.5	118.7	8.17	233.8	23.7	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	81	3
	Event 7	No	14.4	75	7.66	147.5	117.6	7.66	101.1	8.09	0.00015	0.00015	0.00001	0.000005	0.0001	0.001	0.25	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	96	0.1
	Event 8	No	15.2	75.3	7.56	63.8	106.9	7.74	103.3	124.93	1.73	0.00015	0.00001	0.000005	0.0001	0.001	0.69	0.0005	0.011	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	81	36
	Event 9	No	14.2	102.6	10.52	140.1	111.2	7.4	150.1	43.88	1.58	0.00015	0.00001	0.000005	0.0001	0.001	0.56	0.0005	0.019	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	47	0.1
	Event 10	No	15.9		5.87		123.7	7.91	104.5	2	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.14	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.007		0.05			0.1	189	0.1
	Event 11	No	20	97.7	8.66	69.9	67.3	7.44	88.5	6.93	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	38	0.1
	Event 12	No flow																														
	Event 13	No flow																														
	Event 14	No	13.8	89.9	9.31	159.9	125.6	7.67	69.8	1	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.001	0.000015	0.0005	0.1	0.05	0.00001	0.001		0.05		54	0.1	38	0.1
	Event 15	No	10.9	44.5	4.92	151.7		7.29	75.4	5.7	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.0005	0.000015	0.0005	1	0.01	0.00001	0.001	0.05	0.05	0.005	52	1	83	0.1
	Event 16	No	9.3	89.8	10.31	117.4	82.2	6.93	135	20.87	1.49	0.00015	0.00001	0.000005	0.0001	0.001	0.72	0.0005	0.007	0.000015	0.003	0.1	0.005	0.00001	0.003	0.05	0.05	0.04	51	0.1	24	2
	Min		8.60	44.50	4.92	63.80	67.30	6.93	53.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	51.00	0.10	24.00	0.10
	Max		20.00	102.60	12.09	172.00	125.60	8.17	233.80	124.93	1.73	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.02	0.00	0.00	1.00	0.05	0.00	0.01	0.05	0.10	0.04	54.00	1.00	189.00	36.00
	Mean		12.64	78.80	8.75	127.62	104.28	7.56	116.29	25.94	0.45	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.18	0.01	0.00	0.00	0.05	0.05	0.02	52.33	0.18	76.17	4.15
	Count		12.00	11.00	12.00	11.00	11.00	12.00	12.00	11.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	2.00	12.00	2.00	3.00	12.00	12.00	12.00
	St. Dev		3.50	18.20	2.21	37.22	20.22	0.34	48.51	36.24	0.70	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.01	0.00	0.00	0.26	0.01	0.00	0.00	0.00	0.01	0.02	1.53	0.26	42.51	10.30
TR-RS	Event 1	No	12.9	94.6	9.99	21.1	16.2	7.83	80.5	0.07	0.01	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	43	0.1
	Event 2	No	12	76	8.2	20	15	7.87	153	1.02	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	1.1	0.005	0.00001	0.001		1.1			0.1	12	0.1
	Event 3	No Sample																														
	Event 4	No	6.1	85.3	14.78	20.55	12.3	7.03	67.6		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	7	0.1
	Event 5	No	5.8	103.9	13.01	27	17	8.1	180.3	4.15	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	20	0.1
	Event 6	No	9.5	102.2	11.66	42.4	29.8	8.8	233.9	0.2	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	27	0.1
	Event 7	No	14.6	92.4	11.53	52.9	42.5	7.87	95.4	1.01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	52	4
	Event 8	No	16.1	81.5	8.02	46.4	38.6	7.7	95.7	1.84	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	37	0.1
	Event 9	No	9.5	111	12.67	21.5	15.1	7.3	190.8	0	0.08	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	1	0.1
	Event 10	No	12		7.92		22	7.46	64.6	0.05	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.007		0.05			0.1	37	0.1
	Event 11	No	13.2	91.4	8.97	22.3	17.2	6.86	109.9	5.08	0.06	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	1	3
	Event 12	No	19.3	102.3	8.91	52.3	46.7	7.76	109.6	0.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0005	0.003	0.000015	0.0005	7	0.005	0.00001	0.001	0.05	0.05	0.02	56	0.1	1	0.1
	Event 13	No	14.6		8.57		26	7.7	14	0.05	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.003	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.1	0.005	6	0.1	41	0.1
	Event 14	No	11.2	95.3	10.46	23.4	17.2	7.77	89.3	-0.31	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.1	0.005	7	0.1	9	0.1
	Event 15	No	8.7	45.3	5.27	22.7	15.7	7.11	125.3	0.42	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.04	0.0005	0.002	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	6	0.1	1	0.1
	Event 16	No	7.1	93.1	11.29	25.3	16.6	6.92	112.6	1.42	0.05	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.002	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.03	8	0.1	3	0.1
	Min		5.80	45.30	5.27	20.00	12.30	6.86	14.00	-0.31	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	6.00	0.10	1.00	0.10
	Max		19.30	111.00	14.78	52.90	46.70	8.80	233.90	5.08	0.08	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	7.00	0.03	0.00	0.01	0.05	1.10	0.03	56.00	0.10	52.00	4.00
	Mean		11.51	90.33	10.08	30.60	23.19	7.61	114.83	1.08	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.63	0.01	0.00	0.00	0.05	0.13	0.01	16.60	0.10	19.47	0.55
	Count		15.00	13.00	15.00	13.00	15.00	15.00	15.00	14.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	5.00	15.00	5.00	5.00	15.00	15.00	15.00
	St. Dev		3.81	16.55	2.45	12.81	11.10	0.51	55.65	1.63	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	1.78	0.01	0.00	0.00	0.00	0.27	0.01	22.04	0.00	18.33	1.21
YK-IS (D/S)	Event 1	No	13.2	91.1	9.56	36.9	28.6	7.55	101.4	6.42	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0005	0.006	0.000015	0.0005	2	0.005	0.00001	0.001		0.05			2	22	0.1
	Event 2	No	10.1	65.9	7.42	29	20.5	8.39	157.8	9.1	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.15	0.0005	0.001	0.000015	0.0005	0.2	0.005	0.00001	0.001		0.2			0.1	1	14
	Event 3	No	4.7	84.4	10.85	36	22	6.56	98.2	59.63	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.17	0.00001	0.001		0.05			0.1	44	104
	Event 4	No	3.5	96.4	12.79	30.8	18.2	6.87	64		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.001		0.05			0.1	18	0.1
	Event 5	No	5.4	91.8	11.6	35	22	6.91	172.4	10.56	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	31	8
	Event 6	No	7.6	88.5	10.58	31.6	21.1	8.02	235.6	7.75	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	24	6
	Event 7	No	9.5	68.7	7.84	29.1	20.5	7.29	108.6	6	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	43	18
	Event 8	No	11.4	68.1	7.44	28.6	21.2	6.57	118	10.96	0.16	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	27	2
	Event 9	No	10.4	94.7	10.59	29.9	21.5	6.6	170	4.67	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.1	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	1	0.1
	Event 10	No	10.2		8.78		20.3	6.78	63.1	4	0.25	0.00015	0.00001	0.000005	0.0001	0.001	0.23	0.0005	0.004	0.000015	0.0005	0.1	0.01	0.00001	0.003		0.05			0.1	30	8
	Event 11	No	15.6	101.1	8.82	24.7	20.2	6.66	121.2	6.32	0.42	0.00015	0.00001	0.000005	0.0001	0.001	0.47	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	12	9
	Event 12	No	13.2	100.5	9.34	28.9	22.4	6.8	97.8	20.22	0.28	0.00015	0.00001	0.000005	0.0001	0.001	0.37	0.0005	0.006	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	11	0.1	1	28
	Event 13	No	12.9		8.8		25.8	7.97	17	12	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.31	0.0005	0.003	0.000015	0.0005	9	0.02	0.00001	0.001	0.05	0.1	0.005	6	0.1	1	9
	Event 14	No	8.2	91.8	10.81	35	23.8	7.64	96.2	4.41	0.27	0.00015	0.00001	0.000005	0.0001	0.001	0.27	0.0005	0.005	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	10	0.1	25	0.1
	Event 15	No	7.9	44.8	5.31	33.7	22.7	7.14	119.6	10.85	0.34	0.00015	0.00001	0.000005	0.0001	0.001	0.31	0.0005	0.005	0.000015	0.0005	0.1	0.06	0.00001	0.001	0.05	0.05	0.02	9	0.1	1	2
	Event 16	No	5	85	10.86	29.9	18.5	6.44	133.3	8.79	0.4	0.00015	0.00001	0.000005	0.005	0.001	0.27	0.0005	0.005	0.000015	0.001	0.1	0.05	0.00001	0.003	0.05	0.05	0.04	9	0.1	1	5
	Min		3.50	44.80	5.31	24.70	18.20	6.44	17.00	4.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	6.00	0.10	1.00	0.10
	Max		15.60	101.10	12.79	36.90	28.60	8.39	235.60	59.63	0.42	0.00	0.00	0.00	0.01	0.00	0.47	0.00	0.01	0.00	0.00	9.00	0.17	0.00	0.00	0.05	0.20	0.04	11.00	2.00	44.00	104.00
	Mean		9.30	83.77	9.46	31.36	21.83	7.14	117.14	12.11	0.19	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.78	0.03	0.00	0.00	0.05	0.06	0.02	9.00	0.22	17.63	13.34
	Count		16.00	14.00	16.00	14.00	16.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	5.00	16.00	16.00	16.00
	St. Dev		3.51	16.12	1.89	3.48	2.59	0.61	51.04	13.76	0.15	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	2.24	0.04	0.00	0.00	0.00	0.04	0.02	1.87	0.48	15.41	25.34
NZG-IS	Event 1	No	13.4	91.3	9.54	53.8	41.8	7.39	108.1	5.14	0.14	0.00015	0.00001	0.000005	0.0001	0.001	0.21	0.0005	0.005	0.000015	0.0005	3	0.005	0.00001	0.001		0.05			3	43	0.1
	Event 2	No	10.2	70.2	7.89	50	36	7.69	148	3.67	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	52	0.1
	Event 3	No	5.2	80.8	10.27	39	24	6.95	125.4	51.33	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.1			0.1	48	53
	Event 4	No	4.7	95.4	12.28	39.8	24.4	6.67	54.6		0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.001		0.05			0.1	22	0.1
	Event 5	No	6.2	90.4	11.19	45	29	6.97	158	7.68	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	34	4
	Event 6	No	8.1	89	10.53	41	27.7	7.62	154.2	4.18	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	31	6
	Event 7	No	9.7	69	7.84	37	26.2	6.89	117.9	2.46	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	44	9
	Event 8	No	11.4	68.1	7.45	33.2	24.6	6.68	102.2	5.7	0.1	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	27	4
	Event 9	No	11	94.5	10.41	36	26.4	6.5	168.8	4.7	0.19	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0005	0.002	0.000015	0.0005	0.1	0.01	0.00001	0.001		0.05			0.1	13	0.1
	Event 10	No	9.6		9.44		27	6.97	90	4	0.17	0.00015	0.00001	0.000005	0.0001	0.001	0.15	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.002		0.05			0.1	39	7
	Event 11	No	15	98.8	8.74	29.6	23.9	6.75	117.8	3.03	0.23	0.00015	0.00001	0.000005	0.0001	0.001	0.22	0.0005	0.001	0.000015	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	79	0.1
	Event 12	No	13.4	101.2	9.38	40.6	31.6	7.02	99.3	1.2	0.12	0.00015	0.00001	0.000005	0.0001	0.001	0.14	0.0005	0.003	0.000015	0.0005	0.1	0.005	0.00001	0.001	0.05	0.05	0.01	17	0.1	1	4
	Event 13	No	13.2		9.31		39.2	7.54	17	2	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.14	0.0005	0.0005	0.000015	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	10	0.1	1	0.1
	Event 14	No	8.5	92	10.77	49.7	34	7.92	95.8	3.68	0.26	0.00015	0.00001	0.000005	0.0001	0.001	0.2	0.0005	0.003	0.000015	0.0005	0.1	0.06	0.00001	0.001	0.05	0.05	0.005	14	0.1	32	0.1
	Event 15	No	8.6	43.9	5.12	43.7	30	6.58	112.8	6.41	0.21	0.00015	0.00001	0.000005	0.004	0.001	0.18	0.0005	0.0005	0.000015	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.02	13	0.1	8	0.1
	Event 16	No	5.7	85.7	10.76	36.4	23	6.63	105.6	5.3	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.21	0.0005	0.004	0.000015	0.002	0.1	0.005	0.00001	0.001	0.05	0.05	0.04	11	0.1	9	0.1

	Min		4.70	43.90	5.12	29.60	23.00	6.50	17.00	1.20	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	10.00	0.10	1.00	0.10
	Max		15.00	101.20	12.28	53.80	41.80	7.92	168.80	51.33	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.01	0.00	0.00	3.00	0.06	0.00	0.00	0.05	0.10	0.04	17.00	3.00	79.00	53.00
	Mean		9.62	83.59	9.43	41.06	29.30	7.05	110.97	7.37	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.28	0.01	0.00	0.00	0.05	0.08	0.02	13.00	0.28	30.19	5.49
	Count		16.00	14.00	16.00	14.00	16.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	5.00	16.00	16.00	16.00
	St. Dev		3.17	15.75	1.74	6.81	5.75	0.44	38.32	12.28	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.73	0.02	0.00	0.00	0.00	0.02	0.01	2.74	0.73	21.05	13.01
YK-IS	Event.1	No	14.2	94	9.63	32.9	26.1	7.58	172.4	10.66	0.41	0.00015	0.00001	0.000005	0.0001	0.001	0.49	0.0003	0.0001	0.00001	0.0005	0.0005	2	0.003	0.00001	0.001		0.05			2	20	9
	Event.2	No	10.4	69.7	7.8	30	21.4	7.05	139.3	9.44	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.2	0.0003	0.0001	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	24	7
	Event.3	No	4.3	81.5	10.6	31	31	6.9	121.6	32.77	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0001	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	46	38
	Event.4	No	4.2	93.8	12.23	27.6	16.6	6.7	48.1		0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0001	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	14	4
	Event.5	No	8	91.2	11.35	32	20	6.6	153.5	11.62	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0001	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	19	5
	Event.6	No	8.6	85.8	10	29	19.9	7.2	185.8	6.67	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0001	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	34	4
	Event.7	No	10.3	87.2	7.54	26.7	19.2	6.74	91.7	4.04	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0003	0.0001	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	39	11
	Event.8	No	12.4	86.6	7.12	26.5	20.1	6.57	93.8	6.29	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0001	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	27	0.1
	Event.9	No	12	92	9.92	27.9	21	6.24	134.2	5.39	0.28	0.00015	0.00001	0.000005	0.0001	0.001	0.12	0.0003	0.003	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	1	0.1
	Event.10	No	8.8		10.45		21.2	7.05	80.5	7	0.33	0.00015	0.00001	0.000005	0.0001	0.001	0.29	0.0003	0.005	0.00001	0.0005	0.0005	0.1	0.01	0.00001	0.002		0.05			0.1	35	6
	Event.11	No	19.9	96	9.28	23.3	19.2	6.33	88.6	7.67	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.4	0.0003	0.003	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	2	2
	Event.12	No	14.6	98.3	8.84	27	21.6	6.58	62.5	5.72	0.3	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0003	0.007	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001	0.05	0.05	0.02	10	0.1	1	5
	Event.13	No	14.8		8.38		24.6	7.29	34	6	0.32	0.00015	0.00001	0.000005	0.0001	0.001	0.35	0.0003	0.003	0.00001	0.0005	0.0005	5	0.02	0.00001	0.001	0.05	0.05	0.005	5	0.1	1	5
	Event.14	No	9.4	89.6	10.28	31.5	22.1	7.51	53.3	4.7	0.34	0.00015	0.00001	0.000005	0.0001	0.001	0.29	0.0003	0.007	0.00001	0.0005	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.005	9	0.1	21	5
	Event.15	No	8.7	44.7	5.2	30.4	20.9	6.68	123.8	13.88	0.43	0.00015	0.00001	0.000005	0.0001	0.001	0.37	0.0003	0.006	0.00001	0.0005	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.02	8	0.1	1	6
	Event.16	No	5.4	83.4	10.54	27.2	17	6.12	129.5	7.61	0.39	0.00015	0.00001	0.000005	0.0001	0.001	0.26	0.0003	0.007	0.00001	0.0005	0.0005	0.1	0.05	0.00001	0.001	0.05	0.05	0.04	9	0.1	9	3
	Min		4.20	44.70	5.20	23.30	16.60	6.12	34.20	4.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	5.00	0.10	1.00	0.10
	Max		19.90	98.30	12.23	32.90	31.09	7.65	185.80	32.77	0.43	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.01	0.00	0.00	0.00	5.00	0.05	0.00	0.00	0.05	0.05	0.04	10.00	2.00	46.00	38.00
	Mean		10.00	82.40	9.26	28.79	21.37	6.86	107.66	9.28	0.21	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.53	0.01	0.00	0.00	0.05	0.05	0.02	8.20	0.22	18.36	7.14
	Count		16.00	14.00	16.00	14.00	16.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	5.00	16.00	16.00	16.00
	St. Dev		3.79	15.19	1.79	2.65	3.50	0.48	44.92	7.04	0.17	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	1.28	0.01	0.00	0.00	0.00	0.00	0.01	1.92	0.48	15.07	8.14
YK-RS	Event.1	No	15.8	87.5	8.96	30.5	25.1	7.12	142	5.71	0.35	0.00015	0.00001	0.000005	0.0001	0.001	0.45	0.0003	0.005	0.00001	0.0005	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	20	0.1
	Event.2	No	12.7	71.4	7.58	31	24	7.54	138.9	9.77	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.19	0.0003	0.003	0.00001	0.0005	0.0005	0.1	0.005	0.00001	0.001		0.05			0.1	35	6
	Event.3	No	3.4	82	10.91	31	18	6.73	128.8	20.28	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0009	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	40	3
	Event.4	No	3.9	95.3	12.53	29.9	16.1	6.58	44.2		0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0009	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	15	0.1
	Event.5	No	6.4	89.7	10.95	32	21	6.5	158.8	8.97	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.05	0.0003	0.0009	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	25	5
	Event.6	No	10.4	91.9	10.29	30.5	22	7.09	192.4	3.93	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0003	0.0009	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	18	5
	Event.7	No	11.7	70.8	7.69	25.2	18.8	6.79	93.8	3.41	0.013	0.00015	0.00001	0.000005	0.0001	0.001	0.12	0.0003	0.0009	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	40	3
	Event.8	No	13	88.5	7.26	24.9	19.2	6.59	99.1	7.45	0.18	0.00015	0.00001	0.000005	0.0001	0.001	0.07	0.0003	0.003	0.00001	0.0005	0.0005	0.1	0.03	0.00001	0.001		0.05			0.1	1	0.1
	Event.9	No	14	99.1	10.2	28	22.1	6.38	143.2	8.25	0.32	0.00015	0.00001	0.000005	0.0001	0.001	0.16	0.0003	0.003	0.00001	0.0005	0.0005	0.1	0.02	0.00001	0.001		0.05			0.1	1	0.1
	Event.10	No	13.1		6.76		21.4	6.75	73.6	10	0.39	0.00015	0.00001	0.000005	0.0001	0.001	0.31	0.0003	0.009	0.00001	0.0005	0.0005	0.1	0.01	0.00001	0.002		0.05			0.1	31	7
	Event.11	No	18	101.3	9.35	23.5	20.4	6.4	119.1	6.3	0.37	0.00015	0.00001	0.000005	0.0001	0.001	0.54	0.0003	0.002	0.00001	0.0005	0.0005	0.1	0.003	0.00001	0.001		0.05			0.1	78	5
	Event.12	No	17.7	101.3	8.5	26.3	22.7	6.58	94.6	7.89	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.41	0.0003	0.004	0.00001	0.0005	0.0005	0.1	0.02	0.00001	0.001	0.05	0.05	0.005	10	0.1	1	13
	Event.13	No	17.9		7.69		25.5	7.43	20	9	0.39	0.00015	0.00001	0.000005	0.0001	0.001	0.37	0.0003	0.003	0.00001	0.0005	0.0005	6	0.04	0.00001	0.001	0.05	0.1	0.005	1	0.1	1	6
	Event.14	No	11.3	93.3	10.23	29.2	21.5	7.42	64	5.82	0.39	0.00015	0.00001	0.000005	0.0001	0.001	0.32	0.0003	0.005	0.00001	0.0005	0.0005	0.7	0.02	0.00001	0.001	0.05	0.05	0.005	8	0.1	25	0.1
	Event.15	No	9.2	43.6	5.02	29.4	20.5	6.63	119.1	7.48	0.47	0.00015	0.00001	0.000005	0.0001	0.001	0.41	0.0003	0.012	0.00001	0.0005	0.0005	0.1	0.06	0.00001	0.001	0.05	0.05	0.02	7	0.1	10	0.1
	Event.16	No	5.2	84.7	10.77	27.4	17	6.2	118	7.37	0.34	0.00015	0.00001	0.000005	0.0001	0.001	0.28	0.0003	0.013	0.00001	0.0005	0.0005	0.1	0.03	0.00001	0.001	0.05	0.05	0.04	9	0.1	6	5
	Min		3.40	43.60	5.02	23.30	16.19	6.20	20.00	3.41	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.05	0.05	0.01	1.00	0.10	1.00	0.10
	Max		18.00	101.30	12.53	32.00	28.99	7.54	192.40	20.28	0.47	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.01	0.00	0.00	0.00	6.00	0.06	0.00	0.00	0.05	0.10	0.04	10.00	0.10	78.00	13.00
	Mean		11.46	84.27	9.98	28.27	21.17	6.80	108.79	8.11	0.22	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.47	0.02	0.00	0.00	0.05	0.05	0.02	7.00	0.10	21.38	4.04
	Count		16.00	14.00	16.00	14.00	16.00	16.00	16.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	5.00	16.00	5.00	5.00	16.00	16.00	16.00
	St. Dev		4.82	16.01	1.96	2.65	3.17	0.41	44.04	3.88	0.18	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	1.48	0.02	0.00	0.00	0.00	0.01	0.02	3.54	0.00	20.29	3.82

half the Limit of reporting for statistical use (LOR/2)

APPENDIX B OBSERVATIONS AND FIELD DATA

Event 16 (Ebb) 28 + (Flood) 29 June 2023.

28/6 - Light rain throughout sampling event.

22-013 Pre-construction WQM		Grease/oil/ sheen	Temperature (°C)	Dissolved Oxygen (%)	Dissolved Oxygen (ppm)	Specific Conductivity (SPC uS/cm)	Conductivity (uS/cm)	pH	Oxidation Reduction Potential (mV)	Turbidity (NTU)
WC-RS	Month	No	8.3	91.8	10.80	51.3	34.9	7.21	125.5	25.22
	Comment	Increased river height. Increased velocity. Observed increase in TSS.								
WC-IS	Month	No	8.3	92.1	10.82	51.2	34.9	7.16	138.9	28.10
	Comment	DUP01. As above.								
CG-IS	Month	No	9.2	92.6	10.64	487.5	340.3	7.78	152.8	2.65
	Comment	Very clear. Increased river height								
YR1-RS	Month	No.	7.8	92.7	11.04	55.6	37.3	7.25	131.1	12.25
	Comment	As above, similar to WC.								

~~28~~ 2916 –

22-013 Pre-construction WQM		Grease/oil/ sheen	Temperature (°C)	Dissolved Oxygen (%)	Dissolved Oxygen (ppm)	Specific Conductivity (SPC uS/cm)	Conductivity (uS/cm)	pH	Oxidation Reduction Potential (mV)	Turbidity (NTU)
LHG-IS	Month	No	9.2	88.9	10.20	376.6	263.2	7.54	149.8	13.03
	Comment	Clear, .								
YR2-RS	Month	No	7.8	93.2	11.10	56.9	38.2	7.10	136.4	11.65
	Comment	Rock bar covered.								
SSC-IS	Month	No.	9.3	89.8	10.31	117.4	82.2	6.93	135.0	20.87
	Comment	Flowing, milky colour – suspended fines								
TR-RS	Month	No	7.1	93.1	11.29	25.3	16.6	6.92	112.6	1.42
	Comment	Capacity dropped Clear.								
YK-IS (D/S)	Month	No	5.0	85.0	10.86	29.9	18.5	6.44	133.3	8.79
	Comment	Clear fast-flowing.								

22-013 Pre-construction WQM		Grease/oil/ sheen	Temperature (°C)	Dissolved Oxygen (%)	Dissolved Oxygen (ppm)	Specific Conductivity (SPC uS/cm)	Conductivity (uS/cm)	pH	Oxidation Reduction Potential (mV)	Turbidity (NTU)
NZG-IS	Month	No	5.7	85.7	10.76	36.4	23.0	6.63	105.6	5.30
	Comment	Clear, flowing. Animal activity Observed.								
YK-IS	Month	No	5.4	83.4	10.54	27.2	17.0	6.12	129.5	7.61
	Comment	Milky colour. Animal activity observed.								
YK-RS	Month	No.	5.2	84.7	10.77	27.4	17.0	6.20	118.0	7.37
	Comment	Clear Animal activity Observed.								

APPENDIX C LABORATORY CERTIFICATES

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Attention: Nicole Isles

Thursday, July 27, 2023

NATA Accredited Laboratory Number: 9597

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LABORATORY ANALYSIS REPORT

Report Number:2306-0090
Page 1 of 16
For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

Collected By
Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0227	**WC-RS** 28.06.23					
		Aluminium (dissolved)	**0.75**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**5.81**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**21**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.46**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.004**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.07**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.05**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**<2**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2

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LABORATORY ANALYSIS REPORT

Report Number:2306-0090
Page 2 of 16
For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

Collected By
Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0227	**WC-RS** 28.06.23					
		Total Suspended Solids	**26**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0228	**WC-IS** 28.06.23					
		Aluminium (dissolved)	**0.67**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**5.52**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**20**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.39**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.004**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.07**	mg/L	LTM-W-030	0.01

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LABORATORY ANALYSIS REPORT

Report Number:2306-0090
Page 3 of 16
For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

Collected By
Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0228	**WC-IS** 28.06.23					
		Phosphorus, Total	**0.15**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**9**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**17**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0229	**CG-IS** 28.06.23					
		Aluminium (dissolved)	**0.16**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**93.5**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**254**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.05**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**5.12**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000

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Attention: Nicole Isles

Thursday, July 27, 2023

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LABORATORY ANALYSIS REPORT

Report Number:2306-0090

For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

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Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0229	**CG-IS** 28.06.23					
		Nickel (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.03**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**242**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.005**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0230	**YR1-IS** 28.06.23					
		Aluminium (dissolved)	**0.47**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**6.40**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**22**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.30**	mg/L	APHA 3030 B/3120 B	0.01

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LABORATORY ANALYSIS REPORT

Report Number:2306-0090
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For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

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Client

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EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0230	**YR1-IS** 28.06.23					
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.003**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.04**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.02**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**6**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**8**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0231	**LHG-IS** 28.06.23					
		Aluminium (dissolved)	**0.38**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**104**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000

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LABORATORY ANALYSIS REPORT

Report Number:2306-0090
Page 6 of 16
For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

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Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0231	**LHG-IS** 28.06.23					
		Copper (dissolved)	**0.013**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**280**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.19**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**4.89**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.013**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**0.006**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.05**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**228**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**10**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.008**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0232	**YR2-IS** 28.06.23					
		Aluminium (dissolved)	**0.46**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1

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Wagga Wagga NSW 2650
Attention: Nicole Isles

Thursday, July 27, 2023

NATA Accredited Laboratory Number: 9597

Accredited for compliance with ISO/IEC 17025 - Testing

LABORATORY ANALYSIS REPORT

Report Number:2306-0090
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For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

Collected By
Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0232	**YR2-IS** 28.06.23					
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**6.89**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**23**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.29**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.003**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.06**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.05**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**11**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**6**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.002

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Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

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Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0233	**SSC-IS** 28.06.23					
		Aluminium (dissolved)	**1.49**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**12.5**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**51**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.72**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**4.91**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.007**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**0.003**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.04**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.05**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**24**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2

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LABORATORY ANALYSIS REPORT

Report Number:2306-0090

For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

Collected By
Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0233	**SSC-IS** 28.06.23					
		Total Suspended Solids	**2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.003**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0234	**TR-RS** 29.06.23					
		Aluminium (dissolved)	**0.05**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**8**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.05**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.03**	mg/L	LTM-W-030	0.01

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LABORATORY ANALYSIS REPORT

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Facility:

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Water

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Client

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EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0234	**TR-RS** 29.06.23					
		Phosphorus, Total	**0.03**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**3**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0235	**YK-IS(d/s)** 29.06.23					
		Aluminium (dissolved)	**0.40**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**0.005**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**9**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.27**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.005**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000

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LABORATORY ANALYSIS REPORT

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Facility:

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30-June-2023

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Water

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EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0235	**YK-IS(d/s)** 29.06.23					
		Nickel (dissolved)	**0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.04**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.05**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**<2**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**5**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**0.003**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0236	**NZG-IS** 29.06.23					
		Aluminium (dissolved)	**0.30**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**2.49**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**11**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.21**	mg/L	APHA 3030 B/3120 B	0.01

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23Jun-0236	**NZG-IS** 29.06.23					
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.004**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.04**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**9**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<0.2**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0237	**YK-IS** 29.06.23					
		Aluminium (dissolved)	**0.39**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000

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23Jun-0237	**YK-IS** 29.06.23					
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**9**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.26**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.007**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.04**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.05**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**9**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**5**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0238	**YK-RS** 29.06.23					
		Aluminium (dissolved)	**0.34**	mg/L	APHA 3030 B/3120 B	0.03
		Ammonia as N	**<0.1**	mg/L	LTM-W-042	0.1

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23Jun-0238	**YK-RS** 29.06.23					
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Calcium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Total Hardness as CaCO3	**9**	mg/L	LTM-W-038	2
		Iron (dissolved)	**0.28**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Magnesium (dissolved)	**<2.00**	mg/L	APHA 3030 B/3120 B	2
		Manganese (dissolved)	**0.013**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Ortho-Phosphate as P	**0.04**	mg/L	LTM-W-030	0.01
		Phosphorus, Total	**0.03**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Dissolved Solids	**6**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**5**	mg/L	APHA 2540 D	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002

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Thursday, July 27, 2023

NATA Accredited Laboratory Number: 9597

Accredited for compliance with ISO/IEC 17025 - Testing

LABORATORY ANALYSIS REPORT

Report Number:2306-0090

For all enquiries related to this report please quote document number: 2306-0090

Facility:

Order #

Date Analysis Commenced
30-June-2023

Sample Type
Water

Collected By
Client

Date Received
30-June-2023

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0239	**DUP01** 28.06.23					
		Aluminium (dissolved)	**0.60**	mg/L	APHA 3030 B/3120 B	0.03
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Iron (dissolved)	**0.34**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.004**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Zinc (dissolved)	**0.002**	mg/L	APHA 3030 B/3120 B	0.002
23Jun-0240	**Water Blank**					
		Aluminium (dissolved)	**<0.03**	mg/L	APHA 3030 B/3120 B	0.03
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003
		Cadmium (dissolved)	**<0.00002**	mg/L	APHA 3030 B/3120 B	0.0000
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**<0.01**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001

ENVIRONMENTAL AND ANALYTICAL LABORATORIES

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NGH Environmental
Suite 1/39 Fitzmaurice Strret
Wagga Wagga NSW 2650
Attention: Nicole Isles

Thursday, July 27, 2023

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Page 16 of 16
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Sample Type
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EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
23Jun-0240	**Water Blank**					
		Manganese (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Mercury (dissolved)	**<0.00003**	mg/L	APHA 3030 B/3120 B	0.0000
		Nickel (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Nitrogen, total	**<0.2**	mg/L	* APHA 4500-Norg B + 4110 B	0.2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 B/3120 B	0.0000
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002

Note:

**** NATA Accreditation does not cover the performance of this service.***

Signed ..... Michael Glazier, Laboratory Manager.

All samples analysed as received.
All soil results are reported on a dry basis.
The EAL takes no responsibility for the end use of results within this report.
This report shall not be reproduced except in full.
This report replaces any previously issued report

APPENDIX D RPD TABLE

			Al (mg/L)	As (mg/L)	Cd (mg/L)	Cr (mg/L)	Cu (mg/L)	Cyanide (mg/L)	Fe (mg/L)	Pb (mg/L)	Mn (mg/L)	Hg (mg/L)	Ni (mg/L)	Ag (mg/L)	Zn (mg/L)
DUP01	Event 1	DUP01	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.00001	0.001
		YR1-IS	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 2	DUP01	<0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.001	0.000015	0.0005	0.00001	0.001
		WC-IS	<0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.002	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range except Mn**	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	0%	0%	0%
	Event 3	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		Yk-IS (D/S	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 4	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 5	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 6	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 7	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 8	DUP01	1.79	0.00015	0.00001	0.000005	0.0001	0.001	0.73	0.0005	0.011	0.000015	0.0005	0.00001	0.002
		SSC-IS	1.73	0.00015	0.00001	0.000005	0.0001	0.001	0.69	0.0005	0.011	0.000015	0.0005	0.00001	0.002
		RPD% - **Acceptable Range**	3.409090909	0%	0%	0%	0%	0%	5.633802817	0%	0%	0%	0%	0%	0%
	Event 9	DUP01	0.35	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.003	0.000015	0.0005	0.00001	0.001
		WC-RS	0.36	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	2.82	0%	0%	0%	0%	0%	28.57	0%	0%	0%	0%	0%	0%
	Event 10	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.005	0.000015	0.0005	0.00001	0.006
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.08	0.0005	0.004	0.000015	0.0005	0.00001	0.019
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	11.76	0%	0%	0%	0%	0%	0%
	Event 11	DUP01	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		WC-RS	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Event 12	DUP01	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.006	0.000015	0.0005	0.00001	0.002
		WC-RS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.005	0.0005	0.0005	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	60%	0%	85%	0%	0%	0%	33%
	Event 13	DUP01	0.03	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.002
		WC-IS	0.015	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.003
		RPD% - **Acceptable Range**	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
	Event 14	DUP01	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.02	0.0005	0.0005	0.000015	0.0005	0.00001	0.002
		WC-RS	0.04	0.00015	0.00001	0.000005	0.0001	0.001	0.03	0.0005	0.0005	0.000015	0.0005	0.00001	0.05
		RPD% - **Acceptable Range**	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	92%
	Event 15	DUP01	0.08	0.00015	0.00001	0.000005	0.0001	0.001	0.06	0.0005	0.001	0.000015	0.0005	0.00001	0.001
		WC-RS	0.11	0.00015	0.00001	0.000005	0.0001	0.001	0.09	0.0005	0.001	0.000015	0.0005	0.00001	0.001
		RPD% - **Acceptable Range**	16%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
	Event 16		0.67	0.00015	0.00001	0.000005	0.0001	0.001	0.39	0.0005	0.004	0.000015	0.0005	0.00001	0.001
			0.6	0.00015	0.00001	0.000005	0.0001	0.001	0.34	0.0005	0.004	0.000015	0.0005	0.00001	0.002
			6%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	33%
Water Blan	Event 1	**Nothing above LOR**	<0.02	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 2	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 3	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 4	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 5	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 6	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 7	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 8	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 9	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 10	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 11	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 12	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 13	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 14	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 15	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002
	Event 16	**Nothing above LOR**	<0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	<0.01	<0.001	<0.001	<0.00003	<0.001	<0.00002	<0.002

RPD % $|(x_2 - x_1)|/((x_2 + x_1)/2)$

How to calculate the Relative Percent Difference (RPD)

The basic equation for RPD is

$$RPD = \frac{|R1 - R2|}{\left(\frac{R1 + R2}{2}\right)} \times 100,$$

where

$R1$ is sample 1, and

$R2$ is sample 2

R1 and R2 are your sample and duplicate values. Basically, this equation has you calculate the RPD by dividing the difference between the sample and duplicate by the average of the two. Using absolute value signs ensures the RPD doesn't end up as a negative percentage, which wouldn't make sense when looking for a percent difference.

The equation you plug into Excel looks like this:

=ABS((B3-C3)/AVERAGE(B3:C3)*100)

ABS stands for Absolute Value. Using the cell labels in the equation, as seen above (B3, C3), allows you to use the equation down for all your sample/duplicate pairs so you don't have to write a new equation each time. You can do this by clicking on the cell with the equation in it, then click and drag the bottom right corner of the cell down for the rest of your samples.

APPENDIX E CALIBRATION CERTIFICATES

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **21K104040**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH/ORP	✓	
	2. Turbidity	✓	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. SPC		2760 uS/cm		401089	2760uS/cm
2. Temp		18.8°C		Testo	18.8°C
3. pH 4		pH 4.00		399527	pH 3.95
4. pH 7		pH 7.00		399304	pH 6.97
6. DO		0.0%		12110	-0.5%
7.Turbidity		100NTU		396426/402593	99.6NTU
8. ORP		242.64mV		A393379/B400204	242.64mV

Calibrated by: **Jesse Stenroos**

Calibration date: **20/06/2023**

Next calibration due: **20/07/2023**