Pre-construction Water Quality Monitoring Report

Event 1 March 2022

May 2022

Project Number: 22-013

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Document verification

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Draft V1.0	10/05/2022	N. Smith	W. Weir	W. Weir
Final V1.0	11/05/2022	N. Smith	W. Weir	W. Weir

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W. www.nghconsulting.com.au

E. ngh@nghconsulting.com.au

BEGA - ACT & SOUTH EAST NSW
Suite 11, 89-91 Auckland Street
(PO Box 470) Bega NSW 2550
T. (02) 6492 8333

NEWCASTLE - HUNTER & NORTH COAST
Level 1, 31-33 Beaumont Street
Hamilton NSW 2303
T. (02) 4929 2301

BRISBANE
T3, Level 7, 348 Edward Street
Brisbane QLD 4000
T. (07) 3129 7633

SYDNEY REGION
Unit 17, 21 Mary Street
Surry Hills NSW 2010
T. (02) 8202 8333

CANBERRA - NSW SE & ACT
Unit 8, 27 Yallourn Street
(PO Box 62) Fyshwick ACT 2609
T. (02) 6280 5053

WAGGA WAGGA - RIVERINA & WESTERN NSW
35 Kincaid Street (PO Box 5464)
Wagga Wagga NSW 2650
T. (02) 6971 9696

GOLD COAST
2B 34 Tallebudgera Creek Road
Burleigh Heads QLD 4220
(PO Box 424 West Burleigh QLD 4219)
T. (07) 3129 7633

WODONGA
Unit 2, 83 Hume Street
(PO Box 506) Wodonga VIC 3690
T. (02) 6067 2533

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W. www.nghconsulting.com.au
ABN 31 124 444 622 ACN 124 444 622

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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 receive development approval in 2022 to 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 objectives 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.

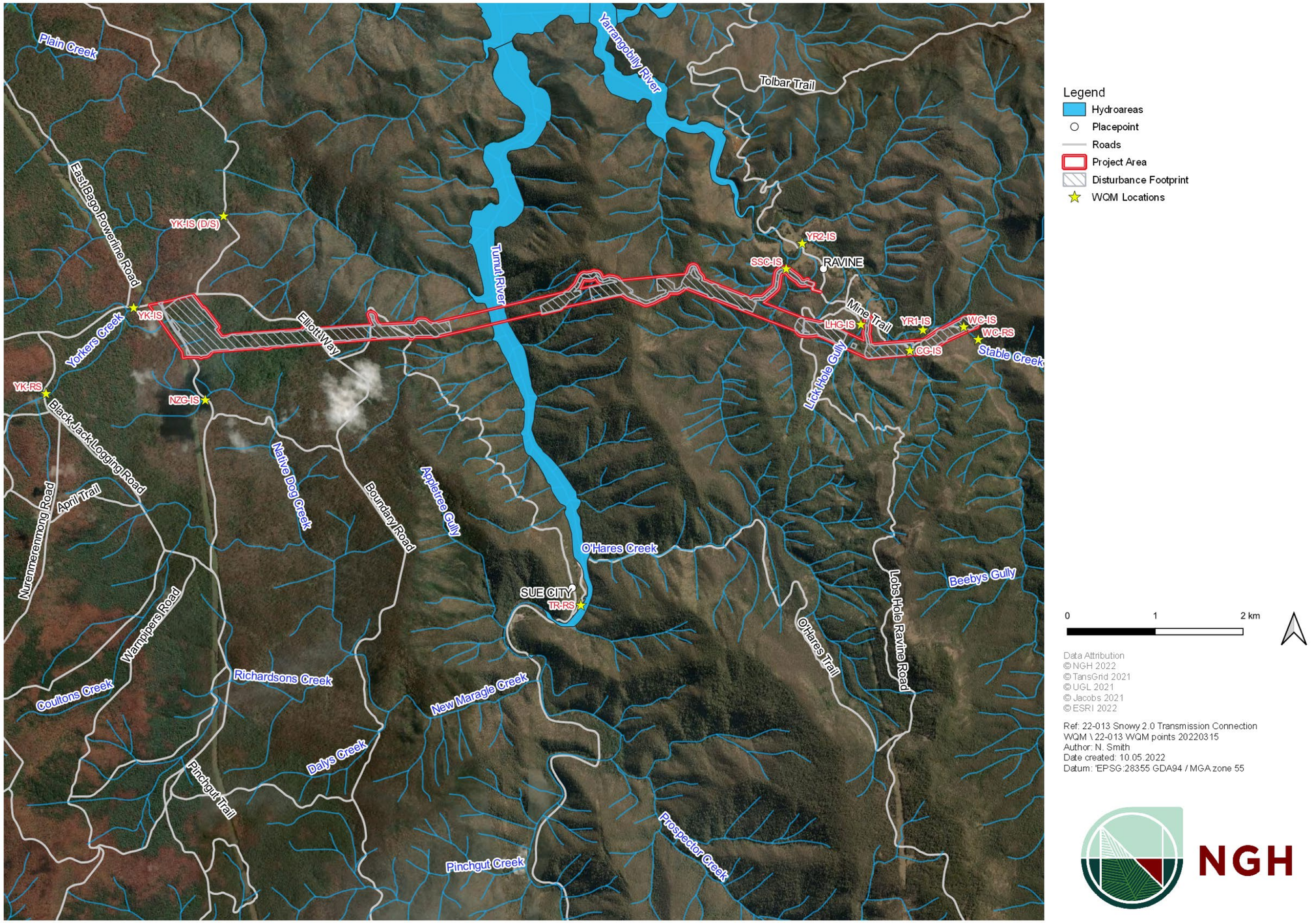

Figure 2-1 WQM locations

3. Monitoring event observations and results

Water quality results for each site and are provided in Appendix A. Results are highlighted where they exceed the default guideline value (refer to the Program (NGH 2022)). Graphic representations of the pre-construction water quality averages for each site will be included in the results as the dataset increases. Field data and observations are provided in Appendix B.

3.1. Event 1

NGH Environmental Scientist, Nicola Smith, conducted monitoring event UGL representative/s on 16 March 2022. The weather was overcast with some light rainfall late morning. Data from the Tumbarumba weather station (Station ID 072043) indicates that the day was calm with a low of 12°C and a high of 23°C. Generally, water flow was observed to be clear with no hydrocarbon sheen and no odours were present. The banks of each channel were well vegetated with the vegetation matrix weedier in some locations.

Sheep Station Creek (SSC-IS) was dry and therefore, no sample was able to be collected. Lick Hole Gully (LHG-IS) is a marsh environment with lots of in-channel aquatic vegetation and large woody debris (LWD). Fine sediment particles on the channel bed entered suspension easily when disturbed. Flow at LHG-IS was too shallow for a probe at approximately 2 centimetres (cm) to 3 cm in depth. However, laboratory samples bottles were filled using the lid of the bottle. Refer to Table 3-1 and Appendix A for results of the chemical analytes, Total Dissolved Solids (TDS) and Total Suspended Solids (TSS). All other channels were flowing with varying depths of flow.

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 physical or chemical stressor was above the DGV are provided in Table 3-1.

Water temperatures ranged from 12.9 – 15.8 degrees Celsius.

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

Site identification	Analyte	DGV	Result	Comment
WC-RS	Total Nitrogen (TN) mg/L	0.25	3.0	
WC-IS	pH	6.5-8	8.14	Alkaline
CG-IS	pH	6.5-8	8.19	Alkaline
	Total Dissolved Solids (TDS) mg/L	-	317	Much higher than other samples. Bed material clay.
YR1-IS	pH	6.5-8	8.35	Alkaline
	Aluminium mg/L	0.027	0.3	

Site identification	Analyte	DGV	Result	Comment
LHG-IS	Total Dissolved Solids (TDS) mg/L	-	348	Much higher than other samples. Bed material clay, marsh environment.
YR2-IS	pH	6.5-8	8.38	Alkaline
YK-RS	Aluminium mg/L	0.027	0.35	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.
	Iron mg/L	0.3	0.45	
YK-IS	Aluminium mg/L	0.027	0.41	Located within Bago State Forest and adjacent to an unsealed track. Unknown activities within the State Forest upstream. Sampling site is adjacent to Elliot Way. Water observed to be cloudy with evidence of bank disturbance from wildlife and pest animals. Results are elevated compared to YK-RS.
	Iron mg/L	0.3	0.49	
	Total Nitrogen (TN) mg/L	0.25	2.0	
YK-IS (D/S)	Aluminium mg/L	0.027	0.26	Located within Bago State Forest and adjacent to an unsealed track. Unknown activities within the State Forest upstream. Sample taken upstream of culvert. Al and Fe results are less than those from YK-RS and YK-IS, both located upstream.
	Iron mg/L	0.3	0.39	
	Total Nitrogen (TN) mg/L	0.25	2.0	
NZG-IS	Aluminium mg/L	0.027	0.14	Located within Bago State Forest. Sample taken upstream of timber supported unsealed track bridge. Banks heavily vegetated, deep channel.
	Total Nitrogen (TN) mg/L	0.25	3.0	

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 surface WQM YR1-IS. DUP01 was analysed for metals and metalloids. The duplicate sample has been compared against the YR1-IS sample by Relative Percentage Difference (RPD) and has returned within an acceptable range or less than 30% for inorganic or less than 5 times the laboratory limit of reporting (LOR). The RPD was 0%.

- A water blank was supplied by the laboratory. The water blank sample was analysed for metals and metalloids, Total Phosphorus, total suspended solids and total dissolved solids. 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. References

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

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

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		Grease/oil/ sheen	Temp. (ºC)	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)	TDS (mg/L)	TSS (mg/L)	Zn (mg/L)
DGV		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
WC-RS	Month 1	No	14.2	90.5	9.28	126.8	100.7	7.85	61.2	0.37	<0.02	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.03	<0.001	0.011	<0.00003	<0.001	3.0	<0.01	<0.00002	12	<2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
WC-IS	Month 1	No	14.3	90.6	9.28	126.7	100.8	8.14	76	0.32	<0.02	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.03	<0.001	0.011	<0.00003	<0.001	<2	<0.01	<0.00002	80	3	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
CG-IS	Month 1	No	14.1	91.8	9.43	536	423.6	8.19	94.3	6.47	<0.02	<0.0003	<0.00002	<0.00001	0.005	<0.002	<0.01	<0.001	0.002	<0.00003	<0.001	<2	<0.01	<0.00002	317	<2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
YR1-IS	Month 1	No	14.9	92.2	9.31	110.7	89.3	8.35	78.3	6.94	0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.06	<0.001	0.003	<0.00003	<0.001	<2	<0.01	<0.00002	69	<2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										

22-013 Pre-construction WQM		Grease/oil/ sheen	Temp. (ºC)	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)	TDS (mg/L)	TSS (mg/L)	Zn (mg/L)
LHG-IS	Month 1	No	Flow too shallow								<0.02	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.02	<0.001	0.001	<0.00003	<0.001	2.0	<0.01	<0.00002	348	<2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
YR2-IS	Month 1	No	15.3	93.1	9.32	109.4	89.2	8.38	76.5	3.28	<0.02	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.06	<0.001	0.003	<0.00003	<0.001	<2	<0.01	<0.00002	74	2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
SSC-IS	Month 1	-	No flow																								
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
TR-RS	Month 1	No	12.9	94.6	9.99	21.1	16.2	7.83	80.5	0.07	<0.02	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.03	<0.001	0.003	<0.00003	<0.001	<2	<0.01	<0.00002	43	<2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
YK-IS (D/S)	Month 1	No	13.2	91.1	9.56	36.9	28.6	7.55	101.4	6.42	0.26	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.39	<0.001	0.006	<0.00003	<0.001	2.0	<0.01	<0.00002	22	<2	<0.002
	Month 2																										
	Month																										

22-013 Pre-construction WQM		Grease/oil/ sheen	Temp. (ºC)	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)	TDS (mg/L)	TSS (mg/L)	Zn (mg/L)
	3																										
	Month 4																										
	Month 5																										
	Month 6																										
NZG-IS	Month 1	No	13.4	91.3	9.54	53.8	41.8	7.39	108.1	5.14	0.14	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.21	<0.001	0.005	<0.00003	<0.001	3.0	<0.01	<0.00002	43	<2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
YK-IS	Month 1	No	14.2	94	9.63	32.9	26.1	7.58	172.4	10.66	0.41	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.49	<0.001	0.011	<0.00003	<0.001	2.0	<0.01	<0.00002	20	8	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										
YK-RS	Month 1	No	15.8	87.5	8.96	30.5	25.1	7.12	142	5.71	0.35	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.45	<0.001	0.005	<0.00003	<0.001	<2	<0.01	<0.00002	20	<2	<0.002
	Month 2																										
	Month 3																										
	Month 4																										
	Month 5																										
	Month 6																										

DO – Dissolved Oxygen; EC – Conductivity; Redox – Oxidation Reduction Potential; TSS – Total Suspended Solids; TDS – Total Dissolved Solids; TN – Total Nitrogen; TP – Total Phosphorus; Al – Aluminium; As – Arsenic; Cd – Cadmium; Cr – Chromium; Cu – Copper; Pb – Lead; Hg – Mercury; Ni – Nickel; Zn – Zinc; Fe – Iron; Ag – Silver; Mn – Manganese.

APPENDIX B OBSERVATIONS AND FIELD DATA

* Download data in office. (mg/L)

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)	
YK-RS	Month 1	NO	15.8	87.5	8.69	30.5	25.1	7.12	142.0	5.71	15:32
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
YK-IS	Month 1	NO	14.2	94.0	9.63	32.9	26.1	7.58	172.4	10.66	15:23
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
YK-IS (D/S)	Month 1	NO	13.2	91.1	9.56	36.9	28.6	7.55	101.1	6.42	13:33
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
NZG-IS	Month 1	NO	13.4	91.3	9.54	53.8	41.8	7.39	108.1	5.14	14:53
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
TR-RS	Month 1	NO	12.9	94.6	9.99	21.1	16.2	7.83	80.5	0.07	13:03
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
LHG-RS	Month 1	NO	14.2	90.5	9.28	126.8	100.7	7.85	61.2	0.37	8:45
	Month 2										

12.77

inaccessible.

WC-RS ✓ signage needs

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)	
	Month 3										
	Month 4										
	Month 5										
	Month 6										
LHG-IS	Month 1	NO	too shallow - marsh.								next time use conduc probe
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
SSC-IS	Month 1	N/A	No Flow.								
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
CG-IS	Month 1	NO	~~14.0~~ 14.1	91.8	9.43	536	423.6	8.19	94.3	6.47	9:20
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
YR1-IS	Month 1	NO	14.9	92.2	9.31	110.7	89.3	8.35	78.3	6.94	9:44
	Month 2										
	Month 3										
	Month 4										
	Month 5										
	Month 6										
YR2-IS	Month 1	NO	15.3	93.1	9.32	109.4	89.2	8.38	76.5	3.28	10:52.
	Month 2										
	Month 3										
	Month 4										

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)
	Month 5									
	Month 6									
WC-IS	Month 1	NO	14.3	90.6	9.28	126.7	100.8	8.14	76.0	0.32.
	Month 2									
	Month 3									
	Month 4									
	Month 5									
	Month 6									

9:00

YS-RS - Ponds u/s of culvert. Sample taken d/s. Running, clear, native veg banks, saddled.
YS-IS - adjacent to road. Milky turbid, heavier disturbance + banks, no odour, flowing, 240cm max.

	Date	Comments
Month 1	16/3/22	Overcast, cool, WC-flow, gravel bed w boulders, rapids, well mixed depth ~ 30cm (RS), clear, no odour, no scum WC-IS - point chosen u/s of bridge to remove any wad impacts. Clear, fast flowing YR1-IS - change pt due to access. Lots of blackberry. Fast flows, shallow, clear, no odour. max depth ~ 50cm (8.44 am) LTLG-IS - Spiny headed Marsh. Too shallow to sample Both samples - no inverts YR2-IS u/s of bridge pool + rapids-
	17/3/22	TR-RS - clear, low flow, peaty. wide channel, calm, trees + grasses. D/S end of rock bar. Clear, no odour. bubbles + gloopy green algae again veg. No odour. YR-IS (d/s) u/s of bridge. no odour, fast flowy, clear ~ 40cm max depth, Deep incised NTG-IS veg channel. 70cm width, 20cm max depth, lots of hoof erosion from horses. channel.
Month 2		
Month 3		

APPENDIX C LABORATORY CERTIFICATES

2203-0069

Cr, Cu, Pb, Ni, Zn, Fe, Mn)

Charles Sturt University

CLIENT:	NGH Pty Ltd
CONTACT:	Nicola Smith
ADDRESS:	35 Kincaid Street Wagga Wagga NSW 2650 ABN: 31 124 444 622
TELEPHONE:	0410 411 660
E-mail	nicola.s@nghconsulting.com.au

SAMPLE IDENTIFICATION	NATURE OF SAMPLE	DATE SAMPLED	TIME SAMPLED	CONTAINER TYPE	NUMBER OF CONTAINERS	ANALYTES REQUIRED *Complete & tick as required*															
						Total Nitrogen	Total Phosphorus	Cyanide	Total Suspended Solids	Total Dissolved Solids	Dissolved Metals (Al, As, C										
YK-IS	Water	16/03/22	~~9.37~~ 15.23	1L, 2x100ml	3	X	X	X	X	X	X										
YK-RS	Water	16/03/22	15.32	1L, 2x100ml	3	X	X	X	X	X	X										
YK-IS(DIS)	Water	16/03/22	13.33	1L, 2x100ml	3	X	X	X	X	X	X										
NZG-IS	Water	16/03/22	14.53	1L, 2x100ml	3	X	X	X	X	X	X										
TR-RS	Water	16/03/22	1503	1L, 2x100ml	3	X	X	X	X	X	X										
WC-RS	Water	16/03/22	8.45	1L, 2x100ml	3	X	X	X	X	X	X										
LHG-IS	Water	16/03/22	10.30	1L, 2x100ml	3	X	X	X	X	X	X										
~~SSC-IS~~	~~Water~~	~~16/03/22~~			3					X	X										
CG-IS	Water	16/03/22	9.20	1L, 2x100ml	3	X	X	X	X	X	X										
YR1-IS	Water	16/03/22	9.47	1L, 2x100ml	3	X	X	X	X	X	X										
YR2-IS	Water	16/03/22	10.52	1L, 2x100ml	3	X	X	X	X	X	X										
WC-IS	Water	16/03/22	9.00	1L, 2x100ml	3	X	X	X	X	X	X										
DUP01	Water	16/03/22	–	1L, 2x100ml	1		X		X	X	X										
Water blank	Water	–	–	1L, 2x100ml	3	X	X	X	X	X	X										

	NAME	SIGNATURE	ORGANISATION	DATE	TIME
RELINQUISHED BY:	Nicola Smith		NGH Pty Ltd	17/3/2022	11:30
Mode of Transport Include Consignment Note # if applicable	Delivery				
RECEIVED BY:	M. GLAZIER		EM	17/3/22	11:30am

ENVIRONMENTAL AND ANALYTICAL LABORATORIES

Locked Bag 588
Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

35 Kincaid Street

Wagga Wagga NSW 2650

Attention: Nicola Smith

Thursday, April 28, 2022

NATA Accredited Laboratory Number: 9597

Accredited for compliance with ISO/IEC 17025 - Testing

REPLACEMENT LABORATORY ANALYSIS REPORT
This Report Replaces Report Sent on 20/04/2022

Report Number:2203-0069
Page 1 of 13

For all enquiries related to this report please quote document number: 2203-0069

Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0189	**YK-IS** 16.03.22 3.23pm					
		Aluminium (dissolved)	**0.41**	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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.49**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.011**	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	**2**	mg/L	* APHA 4500-Norg B + 4110 B	2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**20**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**2**	mg/L	LTM-W-034	2
		Total Suspended Solids	**8**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0190	**YK-RS** 16.03.22 3.32pm					
		Aluminium (dissolved)	**0.35**	mg/L	APHA 3030 B/3120 B	0.03

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Locked Bag 588
Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

35 Kincaid Street

Wagga Wagga NSW 2650

Attention: Nicola Smith

Thursday, April 28, 2022

NATA Accredited Laboratory Number: 9597

Accredited for compliance with ISO/IEC 17025 - Testing

REPLACEMENT LABORATORY ANALYSIS REPORT
This Report Replaces Report Sent on 20/04/2022

Report Number:2203-0069

For all enquiries related to this report please quote document number: 2203-0069

Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0190	**YK-RS** 16.03.22 3.32pm					
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.45**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.005**	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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**20**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0191	**YK-IS (DIS)** 16.03.22 1.33pm					
		Aluminium (dissolved)	**0.26**	mg/L	APHA 3030 B/3120 B	0.03
		Arsenic (dissolved)	**<0.0003**	mg/L	APHA 3030 B/3120 B	0.0003

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Tel: +61 2 6933 2849
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Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0191	**YK-IS (DIS)** 16.03.22 1.33pm					
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		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
		Manganese (dissolved)	**0.006**	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	**2**	mg/L	* APHA 4500-Norg B + 4110 B	2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**22**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**2**	mg/L	LTM-W-034	2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0192	**NZG-IS** 16.03.22 2.53pm					
		Aluminium (dissolved)	**0.14**	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

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Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0192	**NZG-IS** 16.03.22 2.53pm					
		Chromium (dissolved)	**<0.00001**	mg/L	APHA 3030 B/3120 B	0.0000
		Copper (dissolved)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.21**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.005**	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	**3**	mg/L	* APHA 4500-Norg B + 4110 B	2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**43**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**3**	mg/L	LTM-W-034	2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0193	**TR-RS** 16.03.22 1.03pm					
		Aluminium (dissolved)	**<0.02**	mg/L	APHA 3030 B/3120 B	0.02
		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

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Report Number:2203-0069

For all enquiries related to this report please quote document number: 2203-0069

Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0193	**TR-RS** 16.03.22 1.03pm					
		Copper (dissolved)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.03**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.003**	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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**43**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0194	**WC-RS** 16.03.22 8.45am					
		Aluminium (dissolved)	**<0.02**	mg/L	APHA 3030 B/3120 B	0.02
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002

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NGH Environmental

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REPLACEMENT LABORATORY ANALYSIS REPORT
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Report Number:2203-0069

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Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0194	**WC-RS** 16.03.22 8.45am					
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.03**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.011**	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	**3**	mg/L	* APHA 4500-Norg B + 4110 B	2
		Nitrate/Nitrite as N	**<0.1**	mg/L	LTM-W-014	0.1
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**12**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**3**	mg/L	LTM-W-034	2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0195	**LHG-IS** 16.03.22 10.30am					
		Aluminium (dissolved)	**<0.02**	mg/L	APHA 3030 B/3120 B	0.02
		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)	**0.003**	mg/L	APHA 3030 B/3120 B	0.002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002

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Page 7 of 13
For all enquiries related to this report please quote document number: 2203-0069

Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0195	**LHG-IS** 16.03.22 10.30am					
		Iron (dissolved)	**0.02**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.001**	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	**2**	mg/L	* APHA 4500-Norg B + 4110 B	2
		Nitrate/Nitrite as N	**0.1**	mg/L	LTM-W-014	0.1
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**348**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**2**	mg/L	LTM-W-034	2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0196	**CG-IS** 16.03.22 9.20am					
		Aluminium (dissolved)	**<0.02**	mg/L	APHA 3030 B/3120 B	0.02
		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)	**0.005**	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

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17-March-2022

Sample Type
Water

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N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0196	**CG-IS** 16.03.22 9.20am					
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**317**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0197	**YR1-IS** 16.03.22 9.44am					
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.06**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001

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Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0197	**YR1-IS** 16.03.22 9.44am					
		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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**69**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0198	**YR2-IS** 16.03.22 10.52am					
		Aluminium (dissolved)	**<0.02**	mg/L	APHA 3030 B/3120 B	0.02
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.06**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.003**	mg/L	APHA 3030 B/3120 B	0.001

Charles Sturt University

ENVIRONMENTAL AND ANALYTICAL LABORATORIES

Locked Bag 588
Wagga Wagga NSW 2678

Tel: +61 2 6933 2849
Fax: +61 2 6933 2477
Email: eal@csu.edu.au
http://science-health.csu.edu.au/eal

NGH Environmental

35 Kincaid Street

Wagga Wagga NSW 2650

Attention: Nicola Smith

Thursday, April 28, 2022

NATA Accredited Laboratory Number: 9597

Accredited for compliance with ISO/IEC 17025 - Testing

REPLACEMENT LABORATORY ANALYSIS REPORT
This Report Replaces Report Sent on 20/04/2022

Report Number:2203-0069

For all enquiries related to this report please quote document number: 2203-0069

Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0198	**YR2-IS** 16.03.22 10.52am					
		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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**74**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0199	**WC-IS** 16.03.22 9.00am					
		Aluminium (dissolved)	**<0.02**	mg/L	APHA 3030 B/3120 B	0.02
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.03**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.011**	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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Thursday, April 28, 2022

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REPLACEMENT LABORATORY ANALYSIS REPORT
This Report Replaces Report Sent on 20/04/2022

Report Number:2203-0069

For all enquiries related to this report please quote document number: 2203-0069

Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0199	**WC-IS** 16.03.22 9.00am					
		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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**80**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**3**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0200	**DUP01** 16.03.22					
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		Cyanide	**<0.002**	mg/L	* APHA 4500-CN E	0.002
		Iron (dissolved)	**0.06**	mg/L	APHA 3030 B/3120 B	0.01
		Lead (dissolved)	**<0.001**	mg/L	APHA 3030 B/3120 B	0.001
		Manganese (dissolved)	**0.003**	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

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REPLACEMENT LABORATORY ANALYSIS REPORT
This Report Replaces Report Sent on 20/04/2022

Report Number:2203-0069

For all enquiries related to this report please quote document number: 2203-0069

Facility:

Order #

Date Analysis Commenced
17-March-2022

Sample Type
Water

Collected By
N. Smith

Date Received
17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0200	**DUP01** 16.03.22					
		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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000
		Total Dissolved Solids	**69**	mg/L	LTM-W-035	2
		Total Kjeldahl Nitrogen	**<0.2**	mg/L	LTM-W-034	0.2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	2
		Zinc (dissolved)	**<0.002**	mg/L	APHA 3030 B/3120 B	0.002
22Mar-0201	**Water Blank** 16.03.22					
		Aluminium (dissolved)	**<0.02**	mg/L	APHA 3030 B/3120 B	0.02
		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)	**<0.0002**	mg/L	APHA 3030 B/3120 B	0.0002
		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
		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
		Phosphorus, Total	**<0.01**	mg/L	LTM-W-030	0.01
		Silver (dissolved)	**<0.00002**	mg/L	* APHA 3030 E/3120 B	0.0000

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REPLACEMENT LABORATORY ANALYSIS REPORT
This Report Replaces Report Sent on 20/04/2022

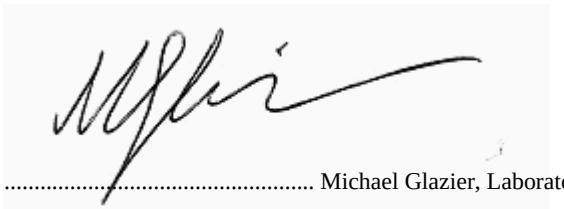
Report Number:2203-0069
Page 13 of 13
For all enquiries related to this report please quote document number: 2203-0069

Facility:	**Order #**	**Date Analysis Commenced**
		17-March-2022
Sample Type	**Collected By**	**Date Received**
Water	N. Smith	17-March-2022

EAL ID	Client ID. / Date/Time sample taken	Test	Result (units)		Method Reference	Limit of Reporting
22Mar-0201	**Water Blank** 16.03.22					
		Total Dissolved Solids	**<2**	mg/L	LTM-W-035	2
		Total Suspended Solids	**<2**	mg/L	APHA 2540 D	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

DUP01	Month 1	DUP01									0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.06	<0.001	0.003	<0.00003	<0.001			<0.00002			<0.002
		YR1-IS									0.03	<0.0003	<0.00002	<0.00001	<0.0002	<0.002	0.06	<0.001	0.003	<0.00003	<0.001			<0.00002			<0.002
		RPD% - **Acceptable Range**									0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			0%			0%
	Month 2																														
	Month 3																														
	Month 4																														
	Month 5																														
	Month 6																														
Vater Blan	Month 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	<0.2	<0.01	<0.00002	<2	<2	<0.002
	Month 2																														
	Month 3																														
	Month 4																														
	Month 5																														
	Month 6																														

APPENDIX E CALIBRATION CERTIFICATES

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **20F162071**

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:			

Bump Test Certificate

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. COND		2.76mS		369734	2.76mS
2. Temp		20.9°C		MultiTherm	20.7°C
3. pH 4		pH 4.00		367234	pH 4.03
4. pH 7		pH 7.00		372012	pH 7.04
5. pH 10		pH 10.00		370064	pH 10.01
6. ORP mV		227.4mV		365451/370891	227.3mV
7. DO		0.00ppm		1910294760	-0.01ppm
8. Turbidity		50NTU		369873	49.3 NTU

Calibrated by: **Gary Needs**

Calibration date: **8/03/2022**

Next calibration due: **7/04/2022**