



## INVESTOR UPDATE

### **LUMWANA WEST, ZAMBIA**

Resource drilling with exploration upside

### **MURDIE, SOUTH AUSTRALIA**

Massive iron oxide-copper-gold targets

LINDSAY OWLER, Director/CEO – June 2021

# INTRODUCING ARGONAUT

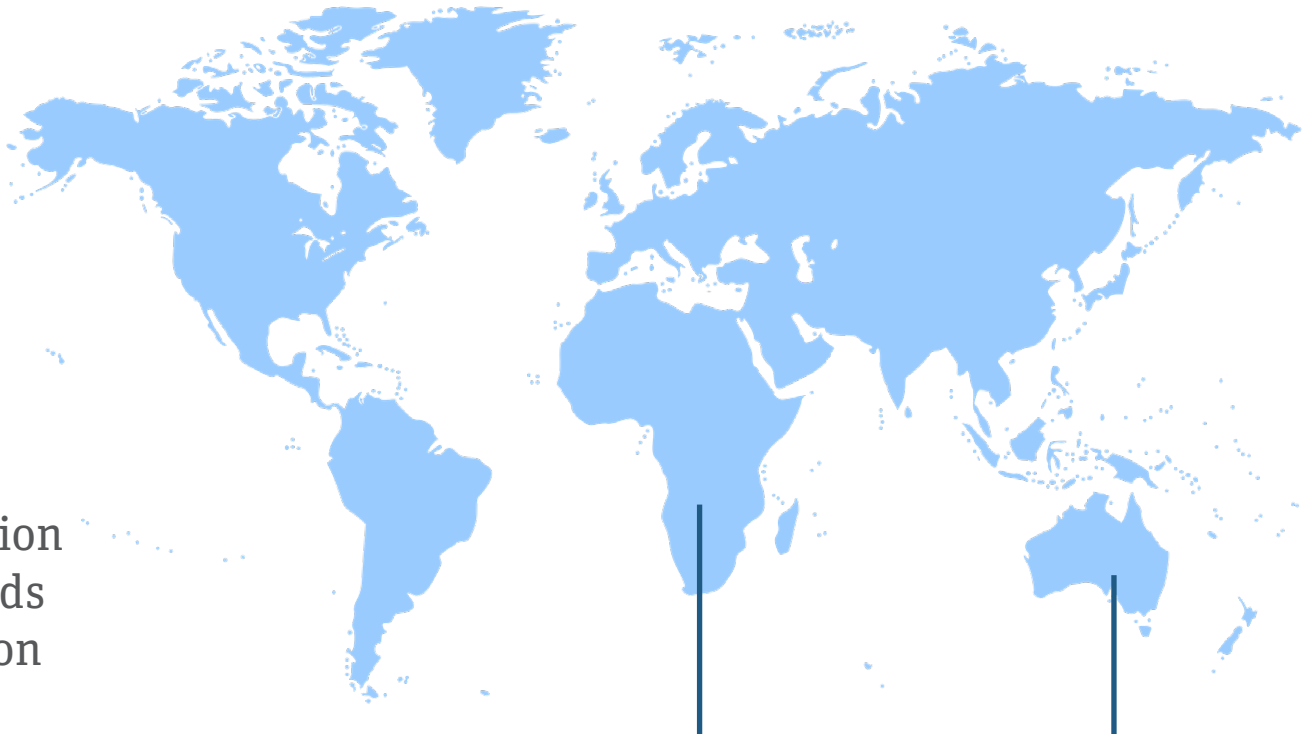
Argonaut Resources NL is an ASX-listed company focused on:

- developing its Lumwana West copper-cobalt project in Northwestern Zambia; and
- exploring its 100% owned Murdie iron oxide copper-gold (IOCG) targets in South Australia.

Argonaut invests in copper exploration and development. The company holds an impressive portfolio of exploration tenements in:

- Central African Copperbelt; and
- South Australia's Olympic Dam Domain.

Additionally, Argonaut is earning-in to a portfolio of gold and nickel licences at Higginsville in the Eastern Goldfields in Western Australia.



**Zambia Copper Cobalt**  
*Zambia*

**Murdie Copper**  
*South Australia*

# INVESTMENT HIGHLIGHTS

## Tier one copper exploration assets

### Lumwana West, Zambia

- Copper-cobalt deposit confirmed by 50+ drill holes.
- Deposit sits between Barrick and First Quantum copper mines.
- 1,700m strike-length deposit which is open to the north and south.
- Exploration upside via surrounding targets.
- Near-surface copper-cobalt oxide mineralisation requires urgent drilling.
- Drilling program to commence July 2021.
- Metallurgical testing well advanced and returning excellent results.
- Potential for low cap-ex, near-term heap leach production.
- Argonaut: 90%

**Strong potential for resource expansion and commercial production.**

### Murdie, South Australia

- Iron oxide copper-gold (IOCG) targets in Olympic Dam geological domain.
- Targets nearby to OZ Minerals' Carrapateena mine and BHP's Oak Dam discovery.
- The Olympic Domain has a history of large, high-grade, unambiguous copper discoveries.
- A drilling program of 4-5 deep holes into large, prospective copper targets commenced in March 2021.
- The discovery of an IOCG deposit by Argonaut would be a transformative, company-making event.
- Argonaut: 100%

**Argonaut is highly leveraged to a copper discovery at Murdie.**

# CORPORATE OVERVIEW

## ASX Code

ARE

## Capital structure

**Share price:** A\$0.01

(7 June 2021)

**Shares on issue:** 2,912,870,000

**Market capitalisation:** A\$29 million

(7 June 2021)

**Liquidity** 9.1 million shares/day

**Cash** (31 March 2021) A\$2,750,000

**Debt** Nil

## Directors

**Pat Elliott** Non-Executive Chairman

**Lindsay Owler** Director and CEO

**Malcolm Richmond** Non-Executive Director

**Andrew Bursill** Non-Executive Director



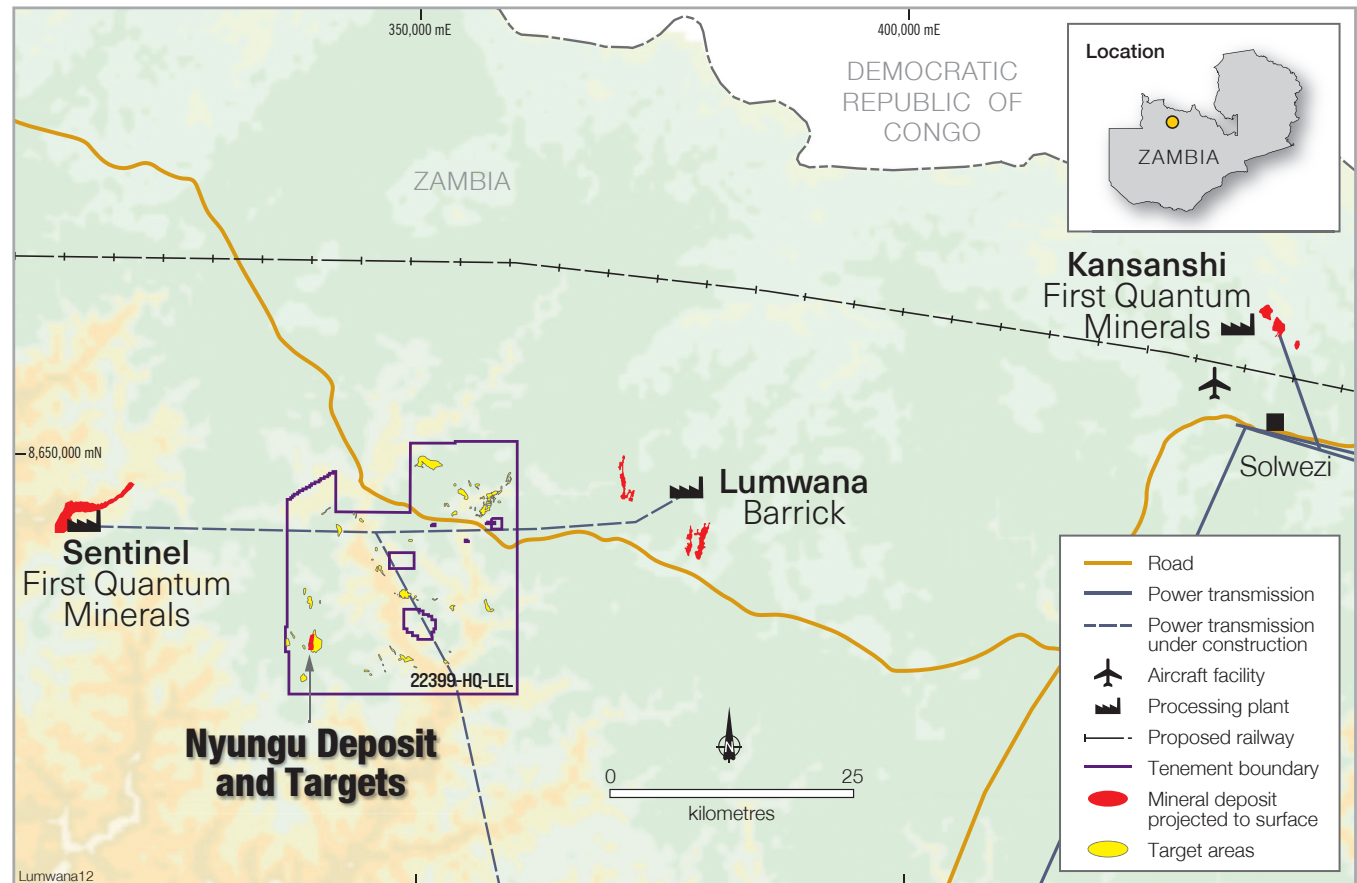
*Accessway to Smith Dam 2 target,  
Murdie Project, May 2021.*

# LUMWANA WEST, ZAMBIA

## Copper and cobalt

### NYUNGU COPPER-COBALT DEPOSIT

- Numerous adjacent and regional copper targets.
- Surrounded by three major copper mines.
- Road, power and smelting infrastructure.

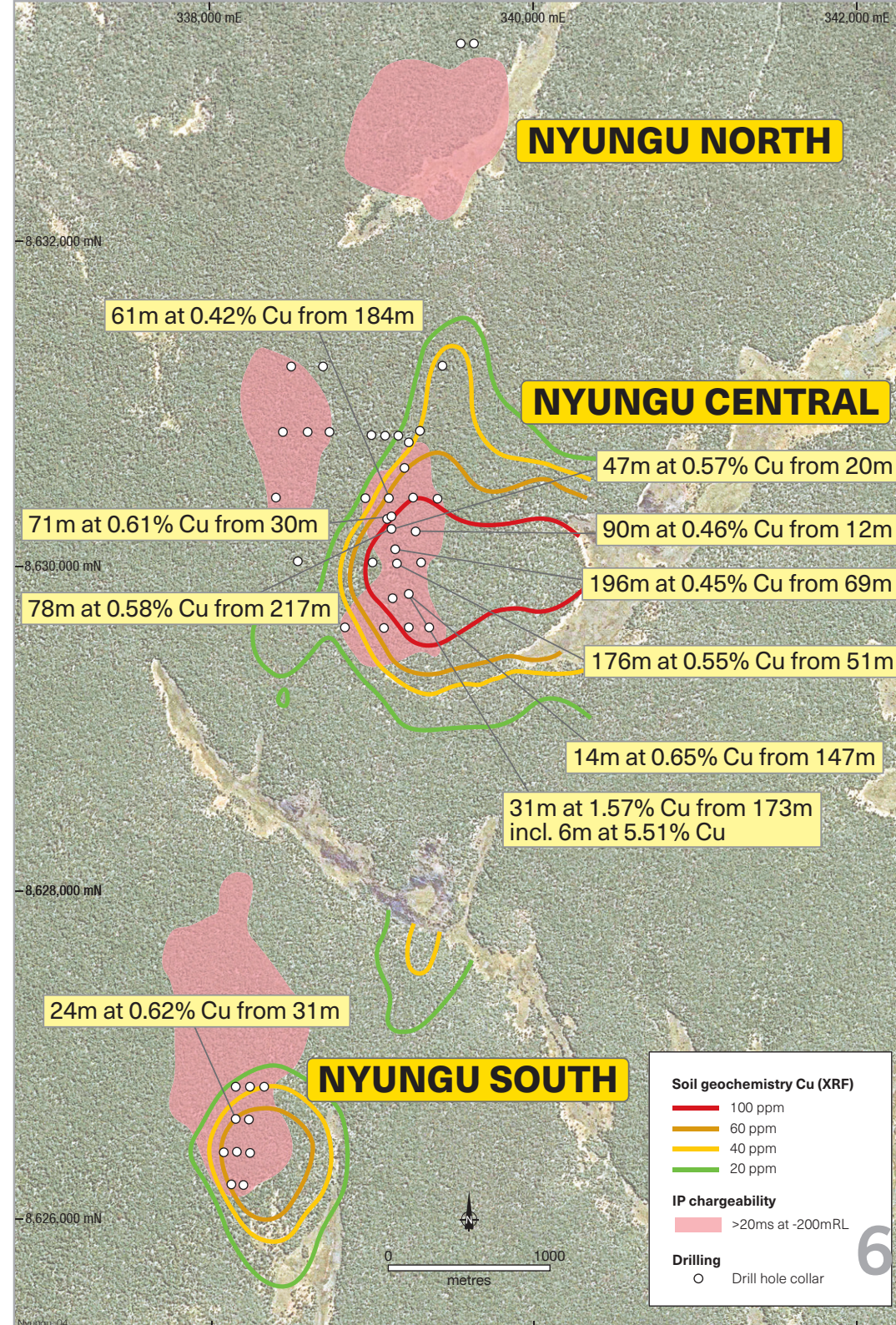


# NYUNGU COPPER-COBALT DEPOSIT

## And surrounding targets

- **NYUNGU CENTRAL:** deposit is defined by over 50 drill holes. A significant mineralised copper deposit with strong potential for extensions.
- **Demonstrated strike length: 1,700m**
- **NYUNGU SOUTH:** edge of mineralised body intercepted by Argonaut drilling. Vast, undrilled IP geophysical anomaly warrants urgent testing.
- **NYUNGU WEST** and **NYUNGU NORTH:** drilling to date has not explained IP anomalies. Further testing warranted.

*Major copper-cobalt deposit with potential for large extensions and repetitions.*



# NYUNGU COPPER-COBALT DEPOSIT

## Exploration target

Commodity	Tonnage Range	Grade Range	Contained Metal Range
	(Mt)	(%)	(kt)
Copper*	130 to 180	0.45 to 0.65	580 to 1,150
Cobalt^	15 to 20	0.08 to 0.12	12 to 24

\* Copper Exploration Target estimation announced to the ASX by Argonaut on 9 April 2013.

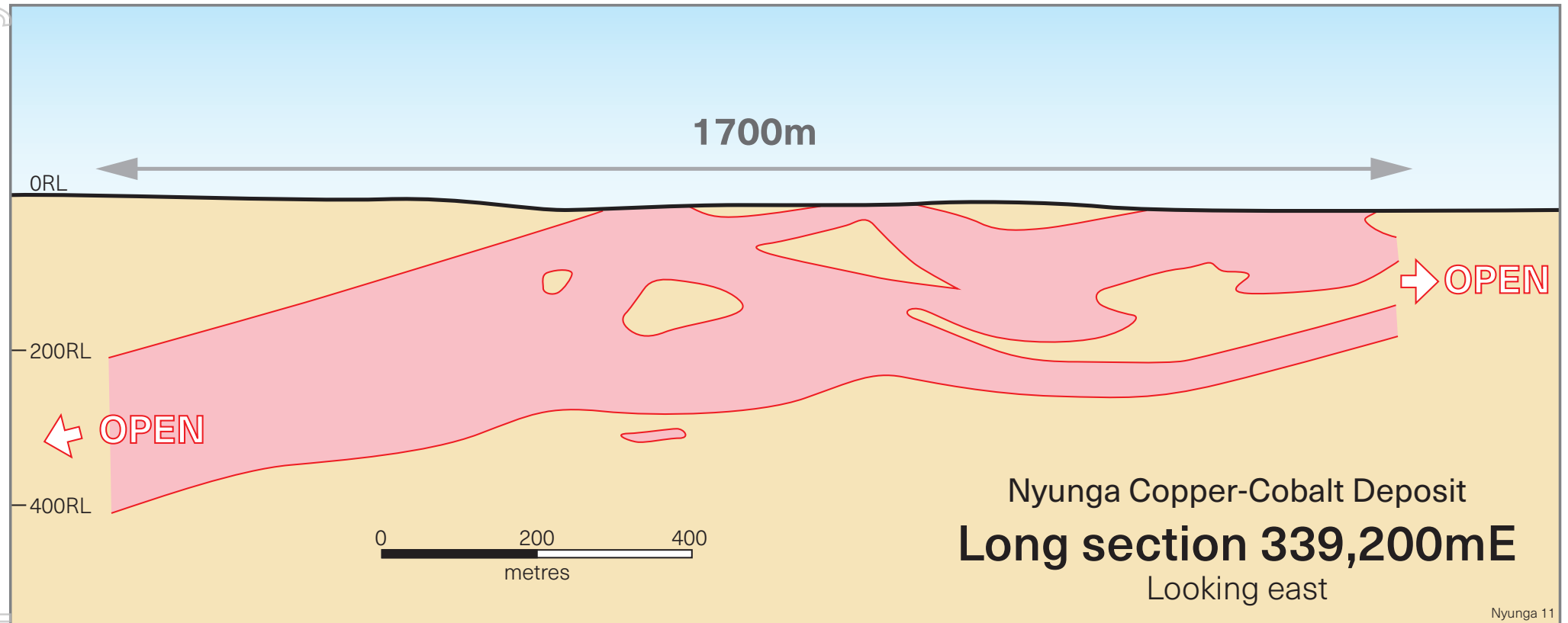
^ Cobalt Exploration Target estimation announced to the ASX by Argonaut on 28 March 2017.

Exploration Targets have been independently estimated to JORC 2012 standards.

*The potential quantity and grade of the Exploration Targets are conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.*

# NYUNGU COPPER-COBALT DEPOSIT

## Long section – copper



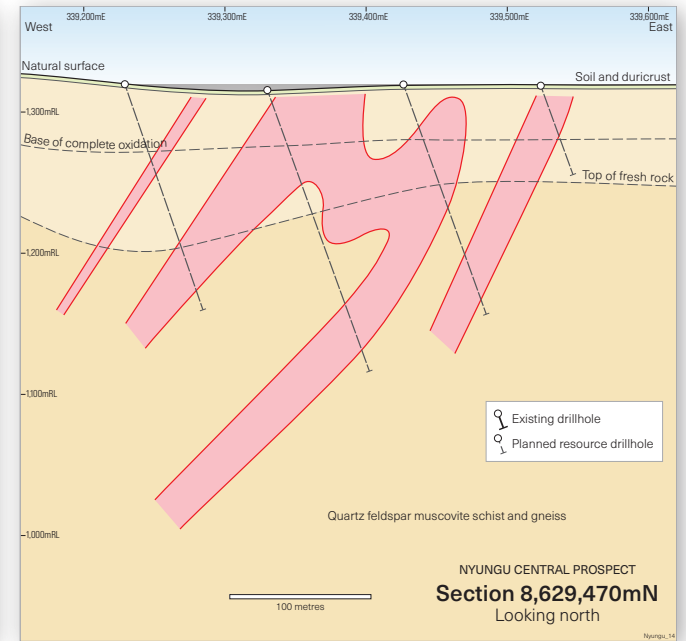
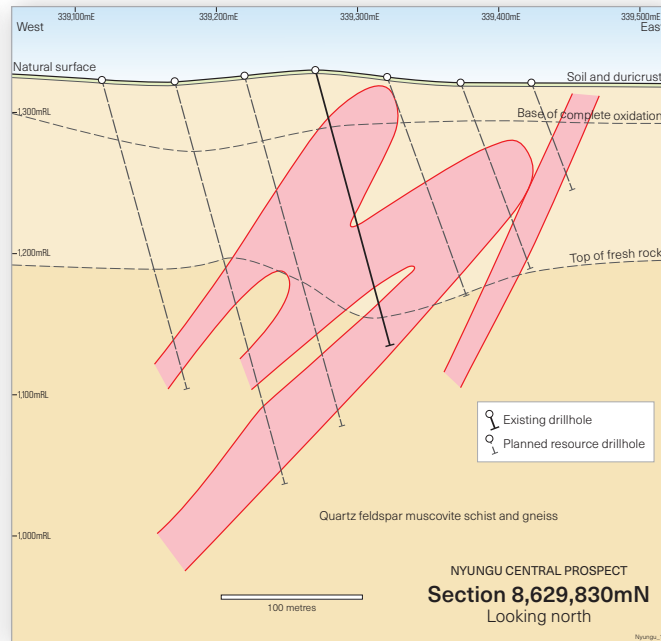
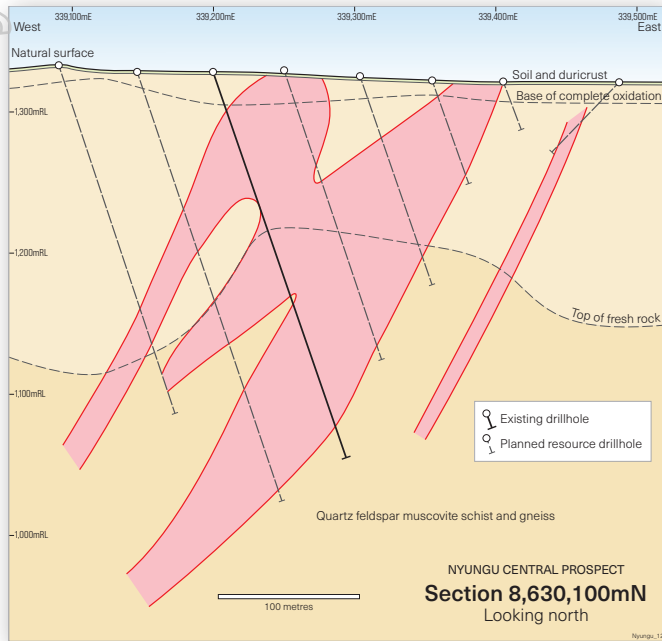
For personal use only



# NYUNGU COPPER-COBALT DEPOSIT

## Cross sections – copper

For personal use only



# NYUNGU COPPER-COBALT DEPOSIT

## 2021 indicative drilling program

### Exploration Drilling

- 1,600m of diamond drilling
- 5 drill holes
- Targeting extensions to Nyungu Central and Nyungu South

### Resource Drilling

- 1,200m of diamond drilling
- 30 drill holes
- Targeting near-surface copper oxide mineralisation

**Budget AU\$2,000,000**

**Commencing July 2021**



*Drilling at Lumwana West, 2015.*

# NYUNGU COPPER-COBALT DEPOSIT

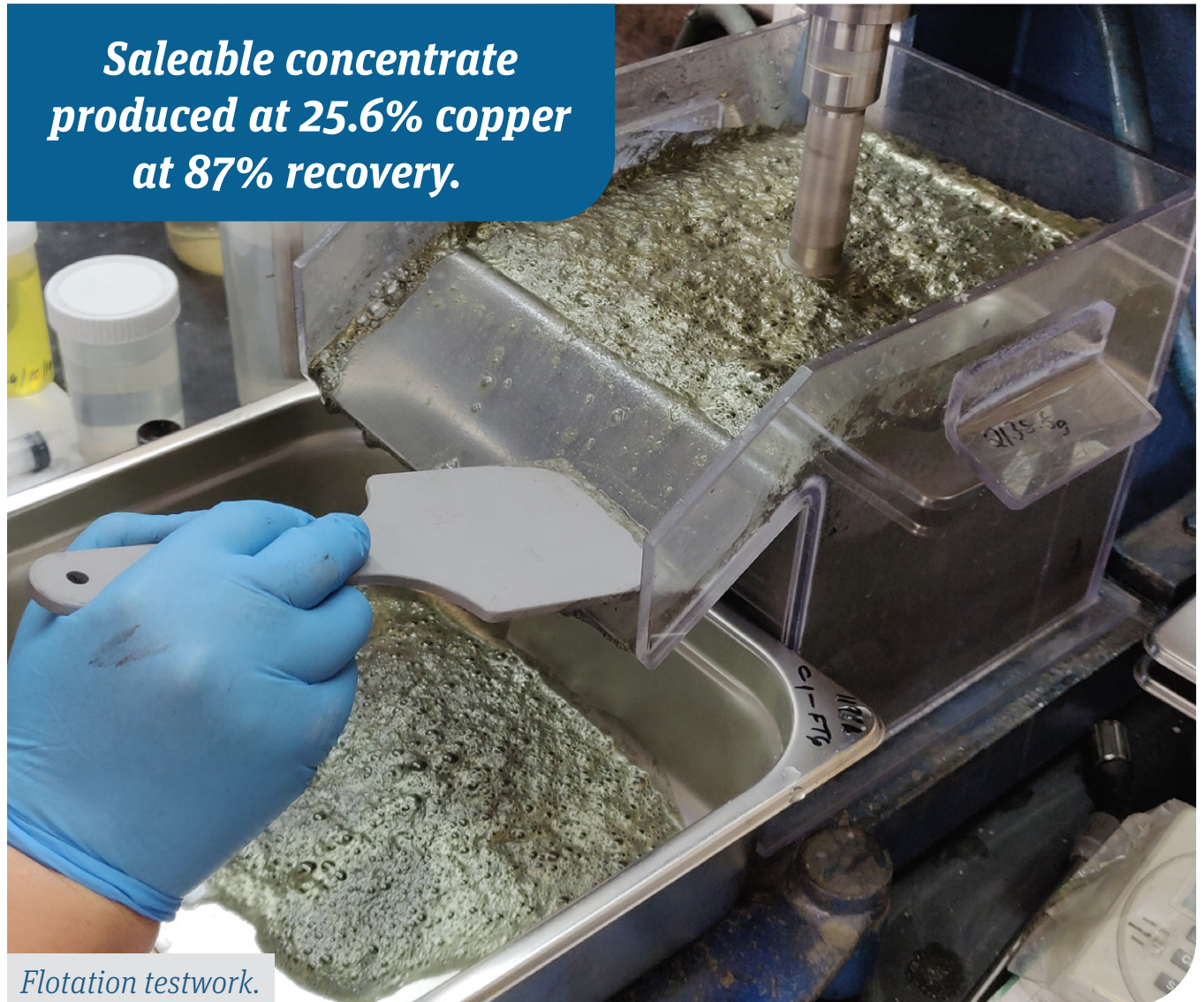
## Metallurgical testwork program

Argonaut is testing the metallurgical properties of oxide, transitional zone and fresh (sulphide) ores.

This information is driving process flowsheets and scoping project economics.

- ✓ Mineralogy
- ✓ Comminution
- Heap leach
- ✓ Flotation
- ✓ Oxidation
  - ✓ Roast/leach
  - ✓ Albion process
- SX/EW

***Saleable concentrate produced at 25.6% copper at 87% recovery.***



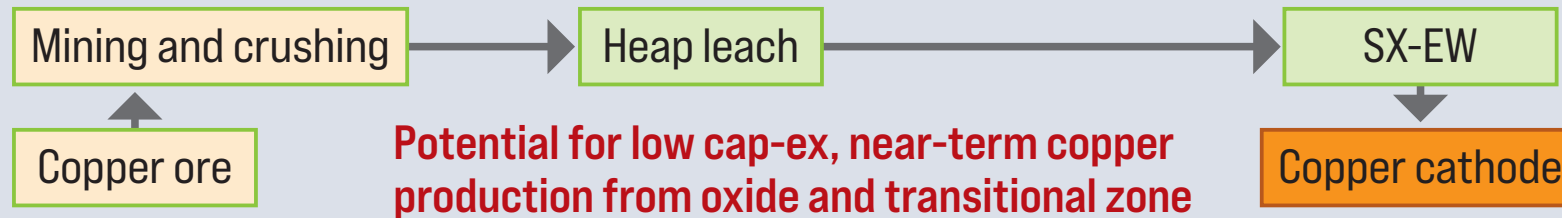
*Flotation testwork.*

# NYUNGU COPPER-COBALT DEPOSIT

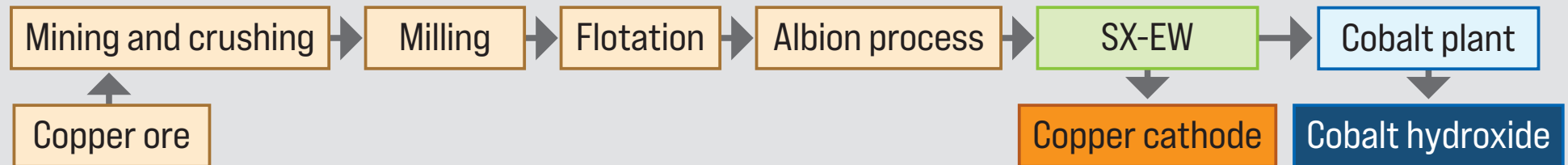
## Conceptual processing flowsheets

For personal use only

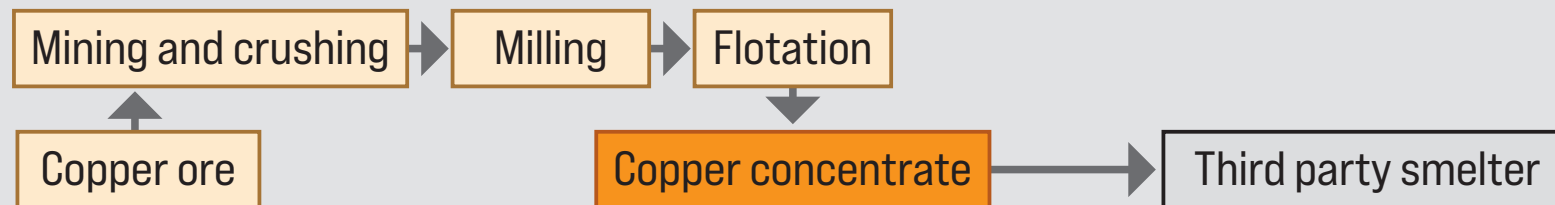
### Stage 1 - Oxide/transition ore



### Stage 2 - Fresh ore



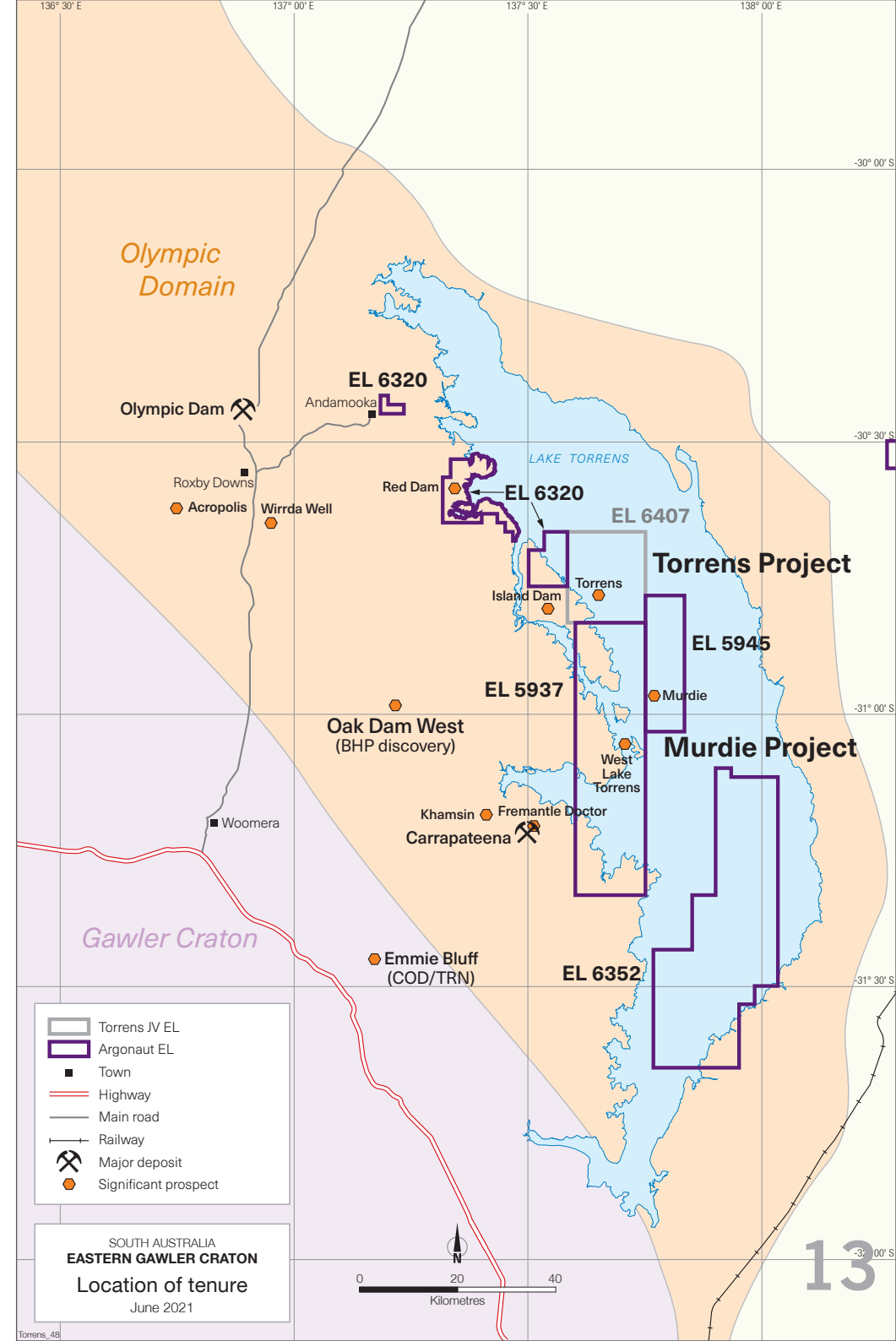
### Stage 2 - Fresh ore - alternative



# MURDIE PROJECT, SOUTH AUSTRALIA Copper

- Tier-one geological address.
- Massive anomalies will multiple deposit-scale target zones.
- Confirmed iron oxide copper-gold (IOCG) systems.

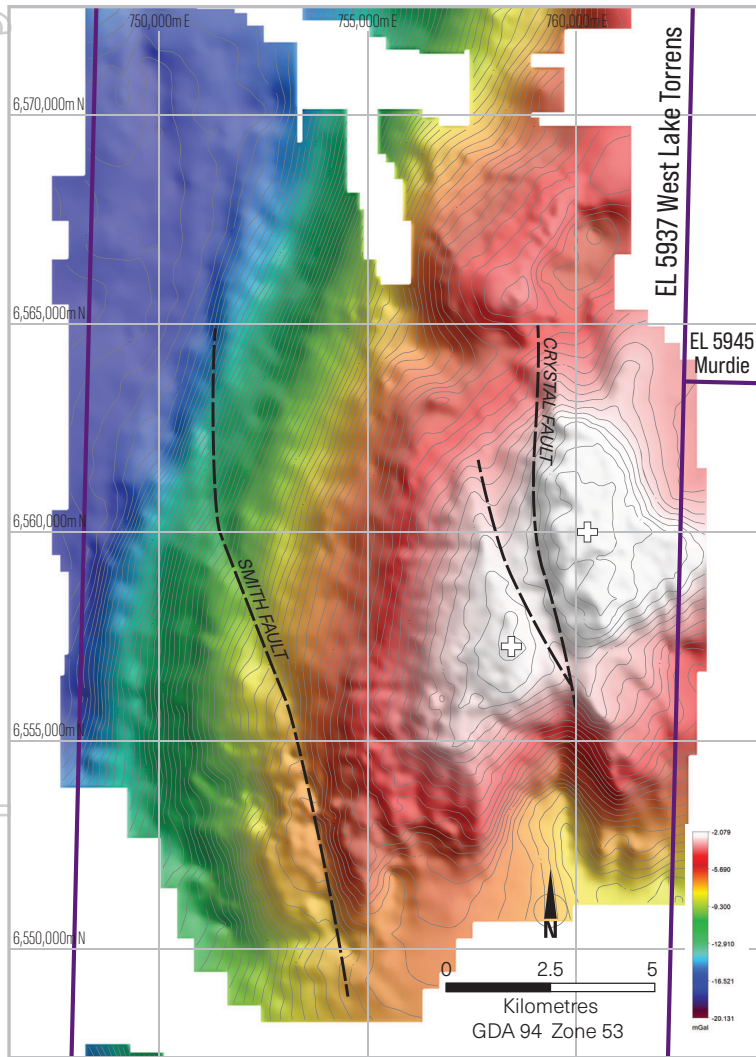
For personal use only



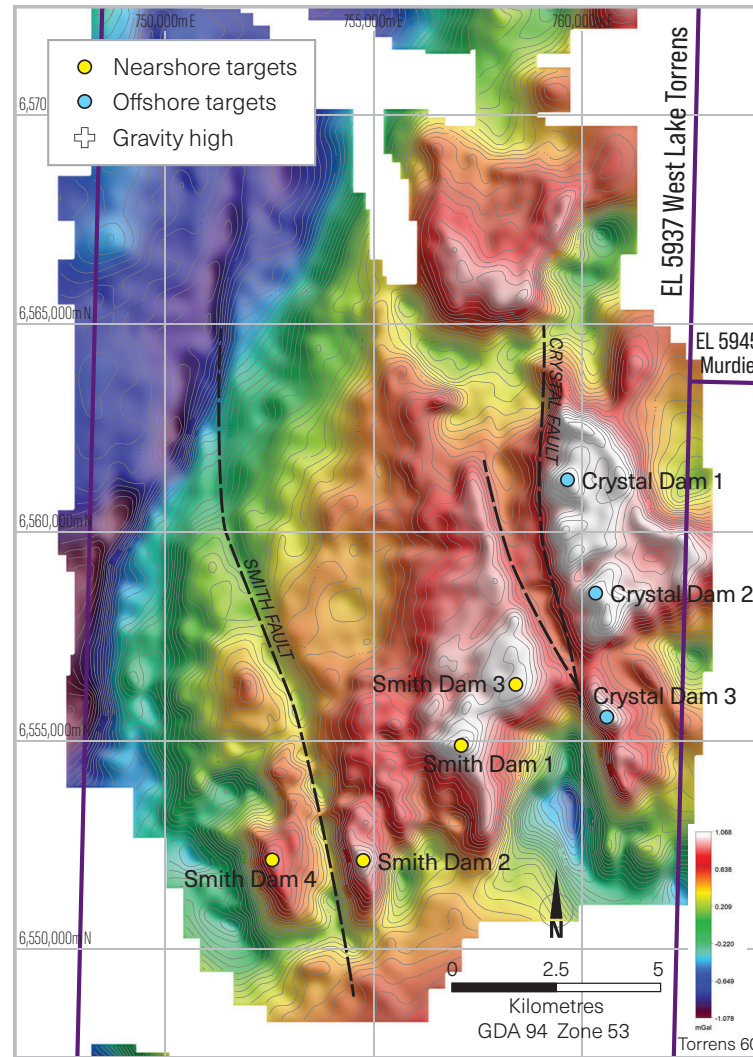
# MURDIE PROJECT

## West Lake Torrens anomaly

For personal use only



WEST LAKE TORRENS  
Bouguer gravity anomaly

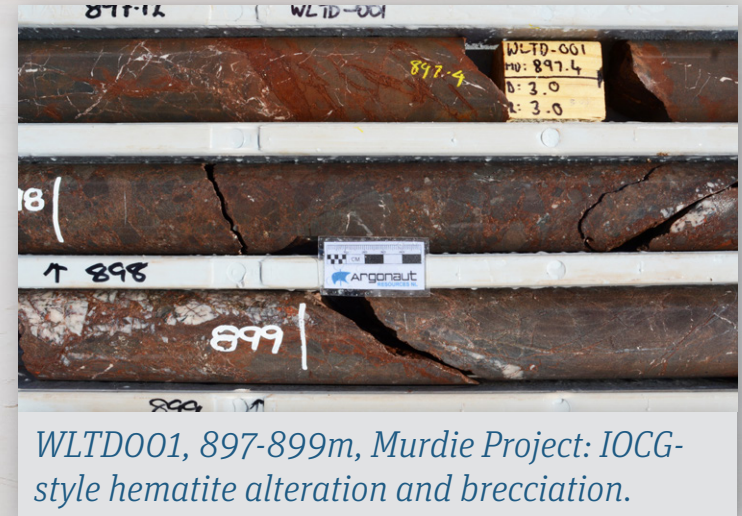


WEST LAKE TORRENS  
Residual gravity anomalies and drilling targets

# MURDIE PROJECT

## Drilling

- The first hole of the current program, WLTD001, at Smith Dam 1 intercepted an IOCG alteration system.
- The intensity of alteration indicates that WLTD001 is 300 to 1,000m from possible copper mineralisation.
- Critical IOCG prerequisites were confirmed.
- Drilling of the second drill target, Smith Dam 2, is in progress.



*WLTD001, 897-899m, Murdie Project: IOCG-style hematite alteration and brecciation.*

*Drilling in June 2021 at the Smith Dam 2 target.*



INVESTOR UPDATE – June 2021

# APPENDICES

For personal use only



# NYUNGU COPPER-COBALT DEPOSIT

## Drilling concepts – copper

Hole	From (m)	To (m)	Interval (m)	Cu (%)
NYU11RD001	63	90	27	0.51
and	184	245	61	0.42
and	209	222	13	0.80
and	274	284	10	0.81
NYU11RD002	94	135	41	0.37
including	142	151	9	0.48
NYU11RD004	121	141	20	0.53
including	127	137	10	0.74
NYU11RD005	61	85	24	0.54
including	61	68	7	0.92
NYU11RD006	107	113	6	1.05
NYU11RD008	104	111	7	0.75
NYU11RD009	24	35	11	0.44
NYU11RD010	51	227	176	0.55
including	66	75	9	0.98
and	96.85	112	15.15	0.79
and	166	199	33	1.04
NYU11RD021	49	58	9	0.50
and	70	77	7	0.76
and	91	94	3	1.69
and	115	121	6	0.53
and	147	161	14	0.65
and	173	204	31	1.57
including	174	191	17	2.44
including	174	180	6	5.51
NYU11RD022	12	102	90	0.46
including	64	98	34	0.67
NYU11RD023	8	67	59	0.49
and	20	67	47	0.57
NYRDO30	143	164.82	21.82	0.51

Hole	From (m)	To (m)	Interval (m)	Cu (%)
NYRDO31	26	58	32	0.46
including	40	55	15	0.71
	77.00	83.10	6.10	0.66
and	157	162.35	5.35	0.82
and	216.90	295	78.10	0.59
NYRDO38	246	295	49	0.40
including	258	289	31	0.54
including	259	267	8	0.95
NYRDO39	107	124	17	0.40
NYRDO40	27	56	29	0.54
including	47	54	7	1.24
NYRDO43	38.65	47.65	9	0.61
NYRDO45	29.55	101.00	71.45	0.61
including	63.55	84.79	21.24	1.03
	125.66	161.00	35.34	0.54
including	145.31	156.00	10.69	1.00
	220.55	285.25	64.70	0.49
including	258.25	269.25	11.00	1.02
NYRDO46	69.25	126.75	57.50	0.44
	132.75	166.00	33.25	0.44
	172	264.88	92.88	0.66
including	183.38	221.50	38.12	1.04
MM296	92	109	17	0.73
	227	253	26	0.63
including	227	230	3	1.39
and	240	247	7	0.83
	389	403	14	0.73
including	394	402	8	1.16

Exploration results previously announced to the ASX:

- Significant copper intersections at Lumwana West, Zambia – 26 March 2012
- Further broad copper intercepts at Nyungu Central - 12 February 2013

# NYUNGU COPPER-COBALT DEPOSIT

## Drill intercepts – cobalt

Hole	From (m)	Interval (m)	Co (%)	Cu (%)
NYU11RDO01	37	120.0	0.06	0.34
including	104	26.0	0.13	0.28
NYU11RDO10	155	72.0	0.08	0.61
including	167	38.0	0.10	0.91
NYU11RDO13	31	1.0	0.56	0.57
NYU11RDO22	12	88.2	0.07	0.47
including	42	10.0	0.19	0.61
NYRDO31	236	59.9	0.07	0.50
including	237	22.0	0.13	0.58
NYRDO38	258	29.0	0.12	0.55
including	259	21.0	0.16	0.57
NYRDO44	181.5	12.2	0.10	0.18
including	186.8	6.0	0.16	0.24
NYRDO45	38.5	69.0	0.06	0.58
including	93	8.0	0.11	0.29
<b>NYRDO46</b>	<b>183.4</b>	<b>81.5</b>	<b>0.12</b>	<b>0.71</b>
<b>including</b>	<b>218.5</b>	<b>23.0</b>	<b>0.21</b>	<b>0.51</b>
MM296	88	53.0	0.05	0.30
including	90	12.0	0.13	0.50



*Drilling at Nyungu deposit, 2012.*

Exploration results previously announced to the ASX:

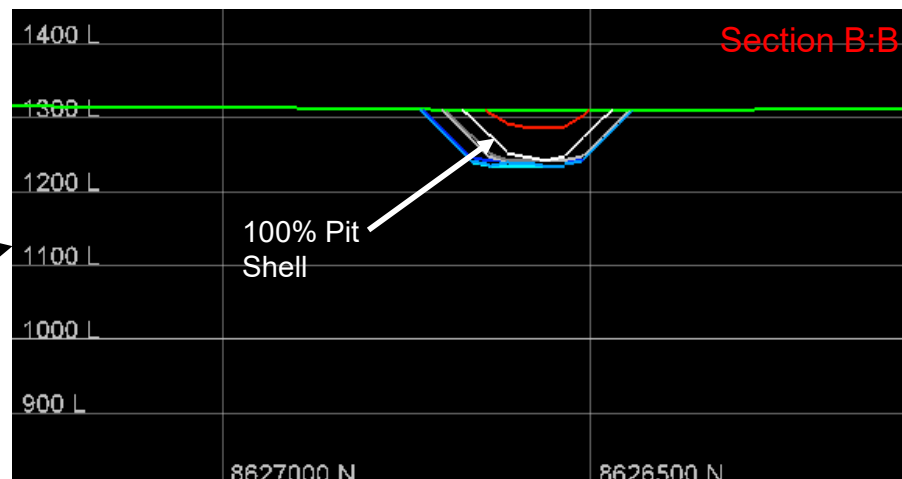
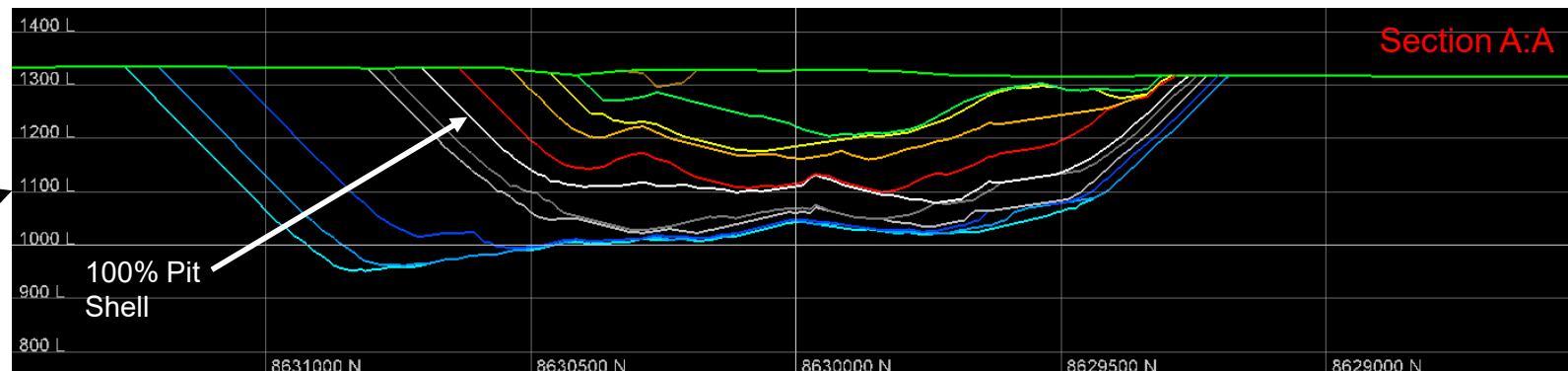
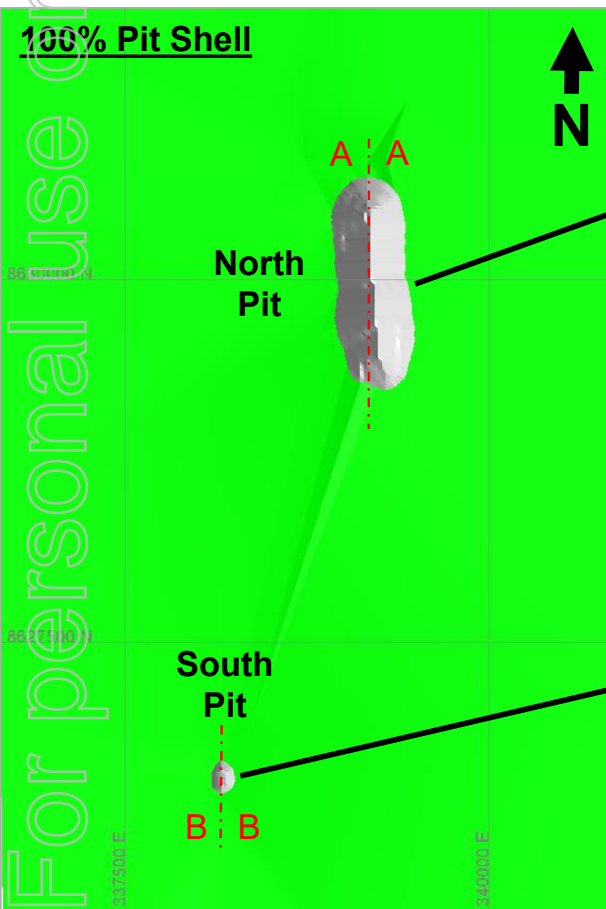
\* Large-scale cobalt potential identified at Nyungu - 6 June 2018

# NYUNGU COPPER-COBALT DEPOSIT

Very low stripping ratio

## Pit shells

For personal use only



- Stripping ratio 1.5:1 to 280m (white line)
- Stripping ratio of 2.3:1 to >350m (light blue line)