

DEVELOPING & DISCOVERING CRITICAL MINERALS Company Overview

May 30 2024







CAPITAL STRUCTURE & FINANCIALS

ASX:BUX 173.25M shares CAB: A\$1.2M (Mar 31 24) 19.75M options Av Vol: 67k

Mkt Cap: A\$17.3M @ 10.0c 27/05/24

CAPITAL RAISE

On 30 May 2024, Buxton announced a placement & SPP to raise ~A\$3.5m. The placement & SPP is supported by IGO Ltd who have raised their ownership in BUX to 19.9% & have the option of appointing a representative to the board of BUX.

Funds raised will be applied to exploration programs across Buxton's portfolio including Narryer, Graphite Bull, Centurion & Matrix Manganese Projects.







DIRECTORS / SENIOR MANAGEMENT



SEAMUS CORNELIUS Non-Executive Chairman

Mr Cornelius brings to the Board over 25 years of corporate experience in both legal and commercial negotiations and has spent working as a corporate lawyer in China over a 17 year period. From 2000 to 2010 he was an international partner with one of Australia's leading law firms and specialized in dealing with cross border investments, particularly in energy and resources. Mr Cornelius is currently the Non-Executive Chairman of Buxton Resources Ltd (appointed 29 November 2010) and Duketon Mining Ltd (appointed 8 February 2013).



MARTIN MOLONEY CEO

Mr Moloney is a geologist with experience in minerals exploration for a variety of commodities including Au, Ag, Cu, Mo, Pb / Zn, U, Sn, Ni and graphite. He has project management experience from greenfields to resource definition in a variety of jurisdictions and has worked for major mining houses, junior explorers, mid-tier producers, a boutique generative consultancy, in private equity, plus geophysical surveying contractors and GIS service & software providers

Mr Moloney joined Buxton in April 2000 as Chief Geologist and transitioned to Chief Executive Officer on 9 August 2024.



ANTHONY MASLIN Non-Executive Director

In his career as a stockbroker at Hartley Poynton Stockbrokers in Perth, Mr Maslin was instrumental in the capital raisings and promotion of several resource development companies. He has significant experience in capital raisings and management of both people and projects.

Mr Maslin has also worked as a corporate promotion consultant to a number of listed companies and is currently serving as Chairman of Wide Open Agriculture Ltd (ASX WOA). He held the position of Managing Director of Buxton Resources from Decembe 2010 to October 2014.



STUART FOGARTY Non-Executive Director

Mr Fogarty has over 20 years of exploration experience with BHP Billiton and Western Mining Corporation. Stuart was BHP's Senior Exploration Manager for North and South America and currently serves as the Managing Director of Duketon Mining.

Mr Fogarty has a very strong background in nickel exploration, having commenced his career at Kambalda Nickel Operations in 1994. He has had senior roles with BHP including Senior Geoscientist for nickel exploration in the Leinster and Mt Keith region, Project Manager WA Nickel Brownfields and Regional Manager Australia - Asia where he was responsible for \$100 million per annum exploration budget.



SAM WRIGHT Company Secretary/CFO

Founder and Managing Director of Straight Lines Consultancy, an advisory business providing services to ASX listed companies. Sam has extensive experience in relation to public company responsibilities, including ASX and ASIC compliance, control and implementation of corporate governance, statutory financial reporting and shareholder relations with both retail and institutional Investors. Mr Wright is Joint Company Secretary of Resolute Mining Limited from anuary 19, 2024 and serves as Non-Executive Director at Great Dirt Resources Ltd since August 28, 2023 and Reach Resources Limited since November 30 2021.



PROJECT PORTFOLIO - TIER 1 MINING JURISDICTIONS



4



PROJECT PIPELINE





DOGLEG

One of Australia's

most significant

nickel discoveries

since Nova

BUX 16% / IGO 54%

exploration in elephant country

BUX 100% & BUX 30% / IGO 70%



Committed JV forward spend ~\$3M JV spend 2018-2024 ~\$30M BUX's tenure interests > 8,250 km² BUX Annual Tenement Commitments < \$850k



EXPLORATION SCHEDULE



PROJECTS

BUXTONRESOURCES

GRAPHITE, BULL



GRAPHITE BULL

A development story that gets better every time we touch it...

Exploration Drilling at GB003RC (ASX 02/03/2023)

4 Mt @ 16.2% TGC Resource

GB003RC 18m @ 16.2% TGC from 145m

BUXTONRESOURCES

9

1) High grade, at surface – 4 Mt @ 16.2% TGC

- Demonstrated Resource Extensions strong potential to be a multi-decade producer >100 ktpa of flake concentrate
- Targeting updated MRE & PFS in Q4 CY24
- 2) Ideal characteristics for Battery Anode Material...
 - Excellent float concentrate grade and recovery with minimal inputs and optimum flake size for PSG
 - Testwork through to electrochemistry completed





Excellent Location for Approvals & Infrastructure

- Western Australia consistently top 5 Fraser Institute ranking – developed, stable mining jurisdiction
- 28 km to major regional road, 500 km to Geraldton port
- Heritage clearances in place to allow substantive resource expansion drill program
- Baseline Flora and Fauna surveys completed no species of concern
- Initial groundwater investigations indicate ample local supplies at <1,000 TDS
- Excellent engagement with stakeholders (Native Title, Pastoral and Local / State / Federal Government)
- Ideal project for US incentive programs such as ~US\$400B Inflation Reduction Act (IRA)



BUXTONRESOURCES



Clear Resource Expansion Potential

- 2014 Resource defined over ~400m strike / 200m depth
- Resource extension targets defined by EM, confirmed by scout drilling
- BUX plans to conduct 15,000m of RC & 1,500m of diamond drilling in upcoming field season





BUXTONRESOURCES

Ground EM results (ASX 07/02/2023)

Scout RC program highlights

GB001RC 33m @ 18.7% TGC from 11m GB003RC 18m @ 16.2% TGC from 145m GB004RC 32m @ 17.7% TGC from 49m and 5m @ 24.8% TGC from 20m GB005RC 5m @ 24.5% TGC from 123m





Tier 1 concentrate for Battery Anode Material

- Responds well to basic flotation = low cost & low risk
- Excellent concentrate grade and recovery, confirmed by multiple rounds of bulk flotation testwork
- Flake size ideal for PSG



Bulk Concentrate Preparation (IMO 20/09/2023)



Consultant (Test)	Grade (% TGC)	TGC Recovery (%)	% Rec @ 95% TGC Con
BL (BF2370)	98.2	90.7	93.7
IMO (FT02)	96.8	89.5	92.3

Sighter Flotation Results (ASX 13/03/2023)





Anode material studies (ProGraphite, Germany)

- Successful electrochemical work demonstrates suitability of Graphite Bull feed for Li-ion Battery Anode manufacture
- 99.97% TGC purity basic alkaline roast at 250°C (no HF)
- Spheronising gives excellent shape and size distribution in line with industry expectations (PSD d90/10 = 2.2)
- Concentrate micronised well with relatively little energy input
- >50% recovery through to SPG outstanding result for lab scale equipment, improvements expected with pilot testwork
- Charging to 370 mAh/g the performance (compared to other graphite tested) is good, very stable, almost no degradation.
- Micronising, spheronising and purification work has been duplicated at two independent laboratories
- Work is ongoing with Anzaplan, who have achieved 99.99% FC purity



BUXTONRESOURCES



SEM image of spheronised Graphite Bull concentrate (ASX 07/08/2023)



2024 Heritage Survey

All approvals are in place to support major resource expansion drilling program

Buxton has a strong commitment to forging excellent working relationships with the Burringurrah People, custodians of local Native Title

Plan view of 2024 planned drilling program with heritage clearance status



BUXTONRESOURCES



Current Focus...

- 1. Electrochemistry (largely complete)
- 2. <u>Pre-feasibility Study</u>
- Metallurgical & environmental studies complete
- Major drilling campaign planned for upcoming field season:
 - Deep diamond holes to test for u/g potential 1,400m
 - Resource infill & extensional drilling (10,000 16,500m)
- Updated MRE targeting Q4 2024, PFS Q1 2025
- 3. Ongoing Partnership Discussions
 - Qualification (200 kg conc sample available June '24)
 - Technology, Offtake & Investment

Deep diamond drillholes planned for Q2 2024

BUXTONRESOURCES





2024 Program will commence with two deep RC / diamond holes to test for underground potential



This exciting, priority exploration program will assess the potential for Graphite Bull to be a long-life open pit + underground mining operation



Low power EM defines shallow Resource expansion targets

4 Mt @ 16.2% TGC Resource

Shallow EM conductivity anomalies – targets for open pit mineable graphite mineralisation outside existing resource

(100% BUX)



Plan view recent shallow Loupe EM image, Ground EM plates, extent of 2014 resource 2023 scout RC drillholes (ASX 23/10/2023)



Prefeasibility

Extension/Infill Resource Drilling, Resource & Mining Studies, Process/Flowsheet, Site Design/Eng, Hydrogeology, Analysis/Documentation, Stakeholder Engagement

Statutory Approvals 2

Site Environmental Assessments, Mining Lease Application/Approval, Mining Proposal Preparation, Mining Proposal Assessment, NT Agreement, State Government Assessment

Definitive Feasibility Study

Infill Reserve Drilling, Metallurgical and Geotech Drilling, Resource and Mining Reserve Studies, Heritage Clearances, Site and TSF Design/Eng, Hydrological drilling, Sampling, Sighter Work, Bulk Sample collection, Pilot Flotation, Process Design, Logistics, Port Studies, Conc PSG testwork, DFS reporting



TIMELINE FOR PROJECT **STUDIES & COMMISSIONING**





Finance, Early Design Scoping, Construction Design, Site Civils, Construction, Commissioning/Stockpile, First Product FOB, Ramp-up to Nameplate





COPPER WOLF ARIZONA. USA

(BUX100% + BUX/IGO JV



Regional Deposits One of the World's Great Copper Districts

Deposit	Contained Cu (Mt)	Ore (Gt)	Grade (% Cu)
Buenavista	45	19.8	0.22
Morenci	43	20.1	0.22
Resolution	28	1.9	1.52
Safford	24	7.2	0.34
El Arco	18	4.7	0.37
Bagdad	17	6.1	0.28



Copper Projects of the SW USA and Northern Mexico

BUXTONRESOURCES





(BUX100% + BUX/IGO JV)

Resource Definition in Elephant Country:

- Arizona, USA Tier 1 Cu/Mo mining jurisdiction, first drilling program in over 30 years
- <u>Cu resources already identified historically discovered in 1965</u>
- CPW0001DD: 83.76 metres at 0.40% Cu and 0.065% Mo for 0.77% CuEq* from 527.91 metres
- CPW0002DD: 405.38 metres at 0.35% Cu and 0.045% Mo for 0.61% CuEq* from 608.38 metres



CPW0002DD at 619.70 m depth. The mafic schist on the left hosts a banded quartz-molybdenite vein which is cut by later veins of blebby sulphides. Disseminated sulphide is stronger in this mafic host compared with the chlorite altered felsic gneiss on the right of photo. Visually estimated sulphide abundances: 1.5% pyrite, 1.0% chalcopyrite and 0.15% molybdenite. HQ3 core is 63.5 mm width. (ASX 06/09/2023)



Copper Wolf Tenure Situation





CPW0002DD – 2 elements of high-grade porphyry systems



Cut HQ3 ½ core from 622.2 m in CPW0002DD. Metapelitic rock cut by multi-stage (stockwork) quartz-sulphide and sulphide-only veining. Secondary biotite forms as selvedge to the veining but is so intense that it appears to completely flood the non-vein component of the sample. Visually estimated sulphide abundances: 6% pyrite, 2.5% chalcopyrite and 0.1% molybdenite. HQ core is 63.5 mm width. (ASX 06/09/2023).



Whole HQ3 core from 710.00 m in CPW0002DD. Medium grained intrusive rock cut by multi-stage (stockwork) quartz-sulphide veins. This sample illustrates strong fine grained molybdenite mineralisation in banded quartz veins and distinct K-feldspar selvedges. Visually estimated sulphide abundances: 4% pyrite, 1.25% chalcopyrite, 0.5% molybdenite. HQ core is 63.5 mm width (ASX 06/09/2023).



Cross section looking East displaying BUX holes, CPW0001DD and CPW0002DD relative to historical exploration hole RC-UC-17. (ASX 06/09/2023)



APPENDIX II

Comparison to Filo del Sol

Buxton's work demonstrates Copper Wolf Project hosts a giant hydrothermal system exceeding 7 km x 3 km in area and over 600 m in depth.

At Filo del Sol project (Filo Corp – TSX:FIL) a widespread porphyry system had been drilled at shallow depths over 5km strike by 2019. Discovery of high-grade Aurora Zone in 2021 drove a >10x increase in FIL's market cap from CAD\$176M (31/12/19) to CAD\$2.8Bn (19/01/24). The high grades at the Aurora Zone result from the combination of intense porphyry vein stockwork & overprinting epithermal system.

In CPW0002DD, the highest Cu grades are found intense porphyry vein stockwork overprints mafic host rocks...

Selected Intercepts from BUX 2023 CPW DDHs

Hole ID CPW000	From (m)	To (m)	Interval	Cu Eq (%)*	Cu (ppm)	Mo (ppm)
1DD	527.91	(eoh) 611.67	83.76	0.77	4,037	645
2DD	608.38	1013.76	405.38	0.61	3,477	454
2DD	663.24	665.07	1.83	1.62	14,000	394
2DD	771.14	806.20	35.05	0.96	5,128	778
2DD	715.27	806.20	90.92	0.83	4,964	587

* CuEq based on \$3.50/lb Cu and \$20/lb Mo (payability / recovery not considered). Copper Equivalent (%) = Cu (%) + (Mo (%) x 5.7)



BUXTONRESOURCES







COPPER WOLF ARIZONA. USA

Drill Targets Emerging on 100% Tenure

Highly encouraging indications of a porphyry Cu-Mo system on 100% BUX tenure at the Wolverine Prospect with no volcanic cover. Geologic mapping has revealed multiple surface exposures with:

- Porphyritic dykes comparable to CPW0002DD
- Coincident veining, k-feldspar & qtz-sericite-py alteration and fe-oxides
- Significant Cu & Mo anomalism
- No historic drilling within the Wolverine Prospect area





Iron-oxide-malachite contained in leached outcrop proximal to mapped porphyries.



Chrysocolla staining inside iron-oxide fractures nearby to porphyritic dacitic dykes.



Leached plagioclase-phyric porphyry cut by quartz-iron oxide veins







Drill Targets Emerging on 100% Tenure

Similar targets emerging at Sun Devil and Aztecs, 7 km from Wolverine, also on 100% BUX tenure

Highly anomalous Cu, Mo and Ag confirmed at surface with lab assays up to 3.08% Cu, 156 ppm Mo and 9.34 ppm Ag

No previous drilling at Sun Devil



Outcrop dominated by quartz + iron oxide stockwork veining with k-feldspar alteration overprinted by sericite. (ASX 13/02/2024)



Sun Devil prospect sample DC0107 - 30,800 ppm (3.08%) Cu & 58 ppm Mo. Highly weathered ?Proterozoic intrusive rock with stockwork veining and supergene chrysocolla overprint. (ASX 11/03/2024)















Advanced Exploration & Drill Testing WKJV - Dogleg Prospect

High tenor Ni sulphides discovered but scale currently unknown – to be defined in upcoming field season

- Merlin Prospect: BUX discovery defines new magmatic nickel province West Kimberley – good grades, but too small for standalone operation
- Various IGO JVs, BUX free carried through to Final Investment Decision at Merlin, Feasibility elsewhere
- Assay results returned from first diamond drillhole at the **Dogleg** Prospect:
 - 13.85 m (True Width 13.24 m) at 4.35% Ni, 0.34% Cu, 0.15% Co from 177.34 m,
 - Including: 5.86 m (True Width 5.60 m) at 7.47%
 Ni, 0.31% Cu, 0.25% Co from 179.08 m
- Merlin could conceivably provide satellite ore to an operation at Dogleg.



Dogleg Prospect Location Plan (ASX 6/11/2023) 27



2023 DISCOVERY – EM + DRILLING

- MLEM targeting magnetic features in 2022 identifies a 280 x 75 m, 12,000 Siemen conductor
- First hole (23WKDD003) intersects sulphide mineralisation hosted in the Ruins Dolerite, within Marboo Formation quartzmuscovite bearing metasediments
 - same geological setting as Merlin
- A second hole (23WKDD004) drilled 65 m down-plunge of 23WKDD003, outside the area of the original MLEM conductor
 - intersected 2.89 m (True Width 2.63 m) at 4.17% Ni,
 0.83% Cu, 0.14% Co from 233.63 m (refer to BUX ASX announcement 01 February 2024).
- 23WKDD003 and 23WKDD004 show strong in-hole DHEM responses (limited effectiveness to see away from the holes
- Combined interpretation of the DHEM data does suggest a potential extension of the MLEM conductor down-plunge
- Modelling of the combined DHEM surveys has produced a 15,000 Siemen conductor with dimensions of 100 m x 125 m



Dogleg Cross Section (ASX 01/02/2024)

Dogleg Long Section (ASX 01/02/2024)

BUXTONRESOURCES





Extremely High Ni Tenor w/ Cobalt Credits

Intercept (m)		Estimated	Assay Results			
From	То	Length	True Width (m)	Ni (pct)	Cu (pct)	Co (pct)
177.34	191.19	13.85	13.24	4.35	0.34	0.15
179.08	184.94	5.86	5.60	7.47	0.31	0.25

23WKDD003 Assay Results (ASX 6/11/2023)



23WKDD003 at 179.1 m - massive sulphide mineralisation with visually logged Ni and Cu sulphides (ASX 4/10/2023)



6.57 m of massive (>80%) sulphides intersected in hole 23WKDD003 at the Dogleg Prospect from 179.1 m, within a 14.7 m zone of mineralisation from 176.45 m (ASX 4/10/2023)





Matrix Mn



BUX 100%)



Matrix Project Claims Map (ASX 14/05/2024,

NEW PROJECT ACQUISITION

- Low-cost brownfields exploration project acquisition covering 12 km²
- Adjacent to world's 6th largest resource by metal 277 Mt @ 2.8% Mn
- These deposits are unique in being hosted by sandstone
- USA currently imports 100% Mn strong local demand predicted for batterygrade sulphate
- Testwork indicates exceptional leaching characteristics. USBoM deemed Artillery Peak the most suitable candidate for in-situ recovery study of all US Mn deposits
- ISR amenable manganese: potential for low CAPEX / OPEX battery grade Mn sulphate / EMM





Source: Pahlman & Khalafalla – 1988 - Leaching of Domestic Manganese Ores with Dissolved SO2. U.S. Bureau of Mines







ISR OPEX ADVANTAGE

Traditional Processing of HPSM



Advanced Processing of HPSM



Potential ISR Processing of HPSM





ISR transfers a significant proportion of the

emissions intensity & environmental impact.

hydrometallurgical processing of mineralised bodies to

the subsurface, directly obtaining solutions of metals.

In situ recovery (ISR) offers the lowest mining costs,



Matrix Claims Map (ASX 14/05/2024)



PHASE 1 EXPLORATION PROGRAM

- Drone magnetics / photography (environmental baseline)
- Active seismic, 4 lines
- RC Drilling
- Diamond Drilling if significant Manganese encountered
- Success = >100 %.m Mn, saturated (below water table) , high & homogeneous permeability, low Ca, right mineralogy







WA GREENFIELDS PORTFOLIO





WA GREENFIELDS

Drill Target Definition, 100% BUX

CENTURION

- Large geophysical feature (IOCG or Carbonatite target)
- Re-establishing access and heritage surveys planned for H2 2024
- EIS Co-funded to \$220k, drilling ASAP

NARRYER

- Ni sulphide (+/- Cu, PGE, Co)
- Drilling planned for H2 2024

LATERON

- Magmatic / hydrothermal Au-Cu
- Sulphide bearing quartz diorites, shallow cover
- IP surveys planned for H2 2024

SHOGUN

- Nova style Ni (Cu, PGE, Co)
- Shallow cover (<50m), No previous MLEM
- HPA negotiation ongoing

ROYALE

- Cu-Au/Mo porphyry model
- Belt scale, untested concept, shallow cover
- HPA negotiation ongoing

MADMAN

- Havieron-style Au
- Bullseye mag target
- No previous ground exploration



CENTURION Drill Target Definition, 100% BUX

Giant geophysical target – Cu &/or Nb-REE

- Coincident 1,500 nT magnetic & 10.1 mgal gravity anomaly over 3.5 x 5 km area
- CRA's 1991 hole failed to test the target, strongly pyritic & chlorite altered bouldersized clasts were logged in Permian conglomerate towards the base of this hole
- Heritage agreements in place, initial works to re-establish ~50km access June / July
- 1,000m drillhole "VE002" top of target 500 700 m depth, EIS co-funded





BUXTONRESOURCES

NARRYER Drill Target Definition, 100% BUX

Nickel sulfide targets ready to drill

- ~7km Airborne EM trend has delivered 3 high conductance EM plates. Oculus presently has one line of ground Moving Loop EM
- Support from coincident Cu + Ni in reconnaissance soil sampling & substantial gravity anomaly
- Extensional MLEM planned at Oculus; Heritage clearances in place to drill at Ranger

MLEM Modelling Results

Locality	Estimated Size of EM Plate	Dip / Dip Direction	Conductance (Siemens)
Ranger	150 m * 800 m, 195 m depth to top	-20 / 160	6,000
Oculus 1	750 + 4000 - 400 - 4 - 4 - 4	-38 / 274	10,000
Oculus 2	750 m * 1000 m, 100 m depth to top	-54 / 85	5,000

(ASX 22nd May 2023)





Gravity image (Bouguer 1VD) (ASX 26th Oct 2021)



FORWARD LOOKING STATEMENTS

This presentation has been prepared by Buxton Resources ("Buxton"). The information contained in this presentation is a professional opinion only and is given in good faith. Certain information in this document has been derived from third parties and though Buxton has no reason to believe that it is not accurate, reliable or complete, it has not been independently audited or verified by Buxton. Any forward-looking statements included in this document involve subjective judgement and analysis and are subject to uncertainties, risks and contingencies, many of which are outside the control of, and may be unknown to, Buxton. In particular they refer only to the date of this document, they assume the success of Buxton's strategies, and they are subject to significant regulatory, business, competitive and economic risks and uncertainties. Actual future events may vary materially from those in the forward looking statements. Recipients of this document are cautioned not to place undue reliance on such forward-looking statements. Buxton makes no representation or warranty as to the accuracy, reliability or completeness of information in this document and does not take responsibility for updating any information or correcting any error or omission which may become apparent after this document has been issued. To the extent permitted by law, Buxton and its officers, employees, related corporations and agents disclaim all liability, whether direct, indirect or consequential for any loss or damage arising out of, or in connection with, any use or reliance on this presentation or information. All amounts are in A\$ unless otherwise stated

COMPETENT PERSONS STATEMENT

The information in this report that relates to Exploration Results is based on information compiled by Mr Martin Moloney, Member of the Australasian Institute of Geoscientists. Mr Moloney is a full-time employee of Buxton Resources Limited. Mr Moloney has sufficient experience which is relevant to the activity being undertaken to qualify as a "Competent Person", as defined in the 2012 edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Moloney consents to the inclusion in this report of the matters based on the information in the form and context in which it appears. All exploration results and geological information has been previously reported in numerous Company ASX announcements under the 2012 JORC Code. This information has not materially changed since it was initially reported.

AUTHORISED BY

The CEO on behalf of the Board of Directors of Buxton Resources.

REGISTERED OFFICE

Suite 1, First Floor 14-16 Rowland St Subiaco WA 6008 Phone +61 (0)8 9380 6063 Postal Address PO Box 661 Nedlands WA 6909 Email: <u>info@buxtonresources.com.au</u> Website: www.buxtonresources.com.au