

ASX: ORP



Unlocking Tomorrow's Energy: Explore the Future of Uranium with Orpheus

INVESTOR OVERVIEW (AGM)
NOVEMBER 2024

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All references to dollars (\$) and cents are to Australian currency, unless otherwise stated.

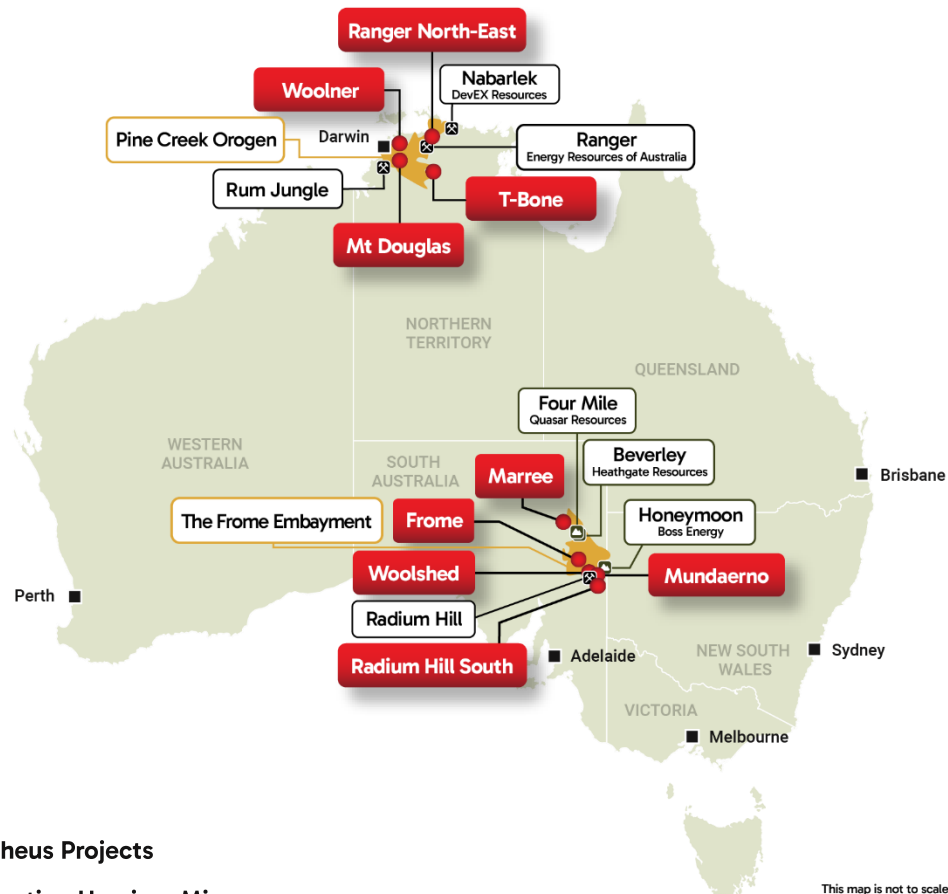
Market and industry data

This Presentation contains third party data relating to the industries, segments and markets in which the Company operates or aims to operate (Industry Data). This information has been prepared using publicly available data. The Industry Data includes third party market data, estimates and projections. There is no assurance regarding the accuracy of the Industry Data, and the Industry Data has not been independently verified by the Company.

Competent Person Statement

Sections of information contained in this report that relate to Exploration Results were compiled or reviewed by Mr Clinton Dubieniecki BSc (Hons), who is a Member of the Australian Institute of Geoscientists and is a full-time employee of Orpheus Uranium Limited. Mr Dubieniecki has sufficient experience which is relevant to the style of mineral deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Dubieniecki consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

Major Investment Highlights (FY23-24)



Transition to Orpheus Uranium

- ✓ Successful transition to establish the business as genuine **uranium focused explorer** – A point of differentiation
- ✓ Re-formed board, and management to reflect the change in business direction
- ✓ Developed geological-relevant uranium focused project portfolio - Targeting **tier-1 (world-class) uranium exploration regions**, on tenure with confirmed presence of mineral systems
- ✓ Major projects **Frome, Radium Hill South & Mt Douglas**

Major Investment Highlights



Who is Orpheus Uranium

- ✓ **Junior uranium focused exploration** company with an existing **portfolio focused** in the two jurisdictions of Australia that allow **uranium exploration** and mining, **South Australia & the Northern Territory**
- ✓ **Strategic development** of a **portfolio** that enables exploration success whilst positioning for market growth → **Continued assessment of geologically relevant opportunities**
- ✓ Developing 100% owned, geologically relevant, advanced uranium exploration projects towards advanced-stage activities

Uranium (USD/Lbs) 81.850 +5.300 (+6.92%)

Fx = 1 USD = 1.55 AUD



The Nuclear Cycle & Discoveries Through Time

URANIUM IS AN ENABLER FOR WHICH EXPLORATION HAS BEEN CYCLIC BUT HAS LED TO DISCOVERIES

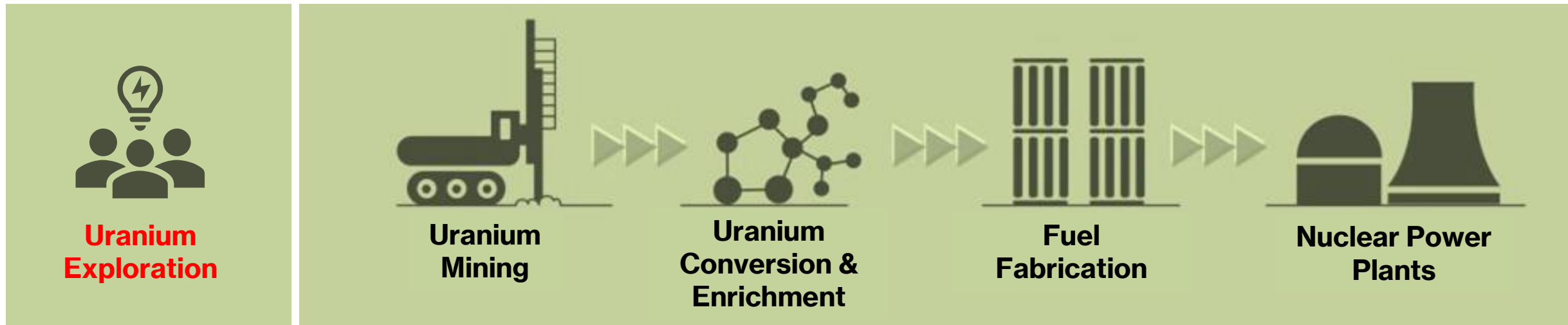
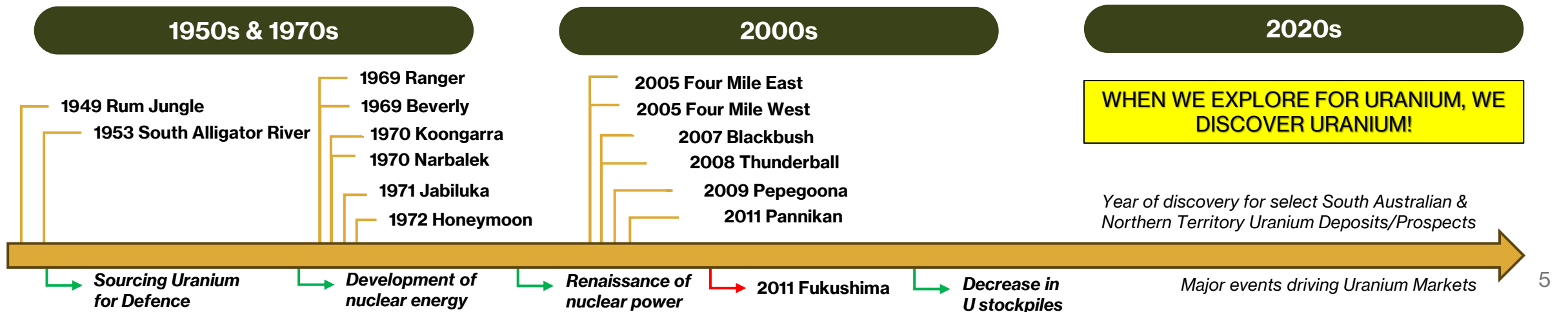


Image modified from: <https://www.orano.group/en/unpacking-nuclear/all-about-nuclear-energy>



Uranium Deposit Types

SEDIMENTARY-STYLE URANIUM (SA)

- ✓ Mineralisation occurs within permeable units, typically but not limited to saturated unconsolidated permeable sandstones
- ✓ Uranium sourced from surrounding enriched uriferous rocks e.g., granites (SAs Frome Embayment contains some of the most uriferous surface and near surface rocks globally)
- ✓ Recovered through In-Situ Recovery (ISR) – lower cost, and dynamic operations



Source (Heathgate Resources Webpage): <https://heathgate.com.au/projects/>

UNCONFORMITY-STYLE URANIUM (NT)

- ✓ Mineralisation occurs peripheral to major structures within Proterozoic crystalline basement (commonly meta-sediments)
- ✓ Uranium sourced from either oceanic brines associated with sedimentary basins or enriched hydrothermal brines from beneath
- ✓ Recovered through conventional (open-cut or underground) operations

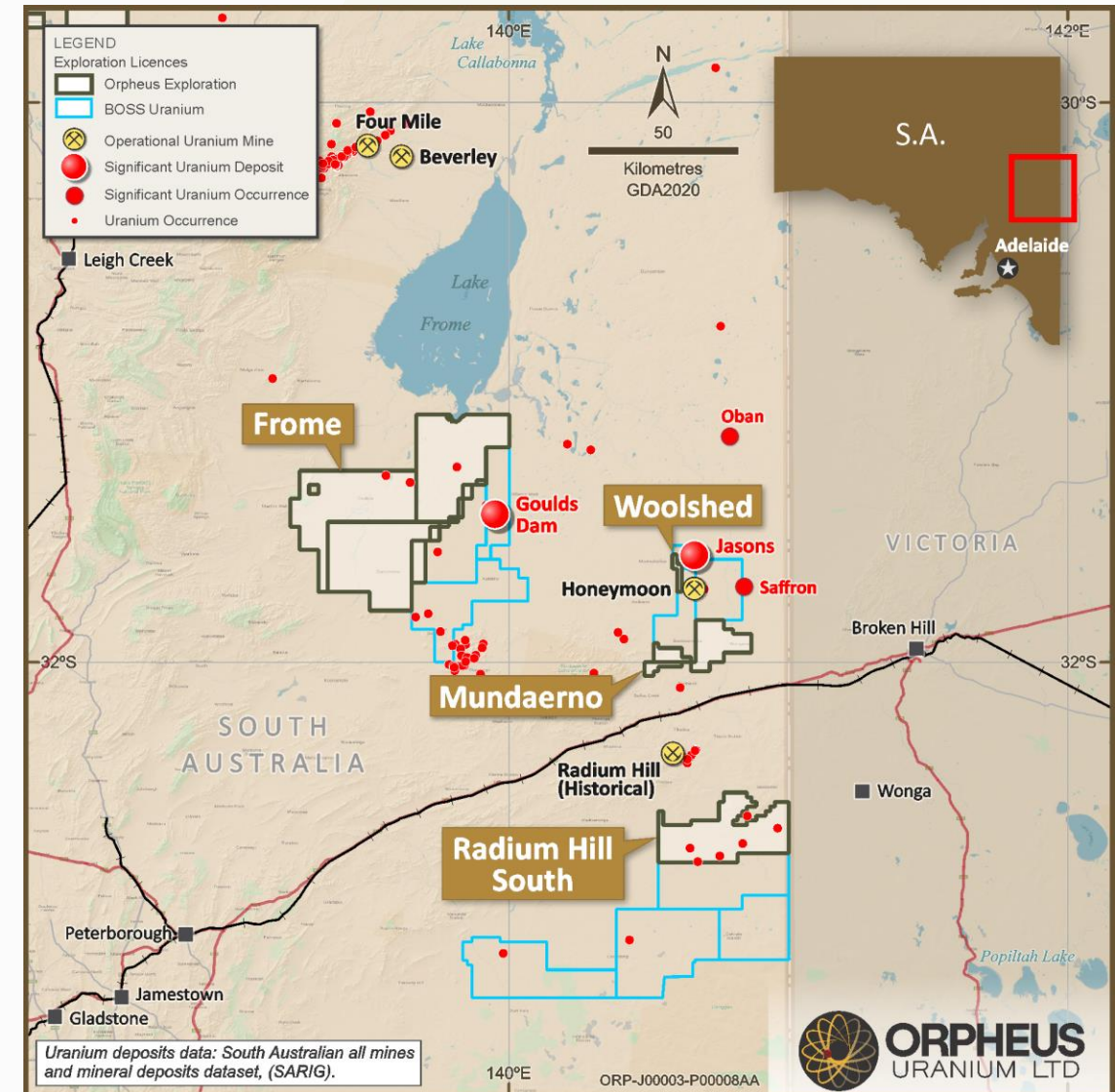


Key South Australian Projects

SEDIMENTARY-STYLE URANIUM

Leveraging results of previous explorers who halted work in 2011-14

- **Frome Project**
~12km west of Gould's Dam Uranium Deposit, located in a globally significant location in terms of discovered economic sandstone hosted uranium deposits
- Callabonna Sub-Basin (SA) – a good place for a uranium mine
- **Radium Hill South Project**
~20 km south of Radium Hill Uranium Field and hosts five uranium occurrences
- **Mundaerno Project**
~12km south of Honeymoon Uranium Mine and hosts part of the highly prospective Yarramba Palaeochannel
- **Project Generation**
 - Ongoing assessment for strategic acquisition of projects that contain geologically relevant settings and allow fast-tracked on-ground advanced stage activities



Frome Project

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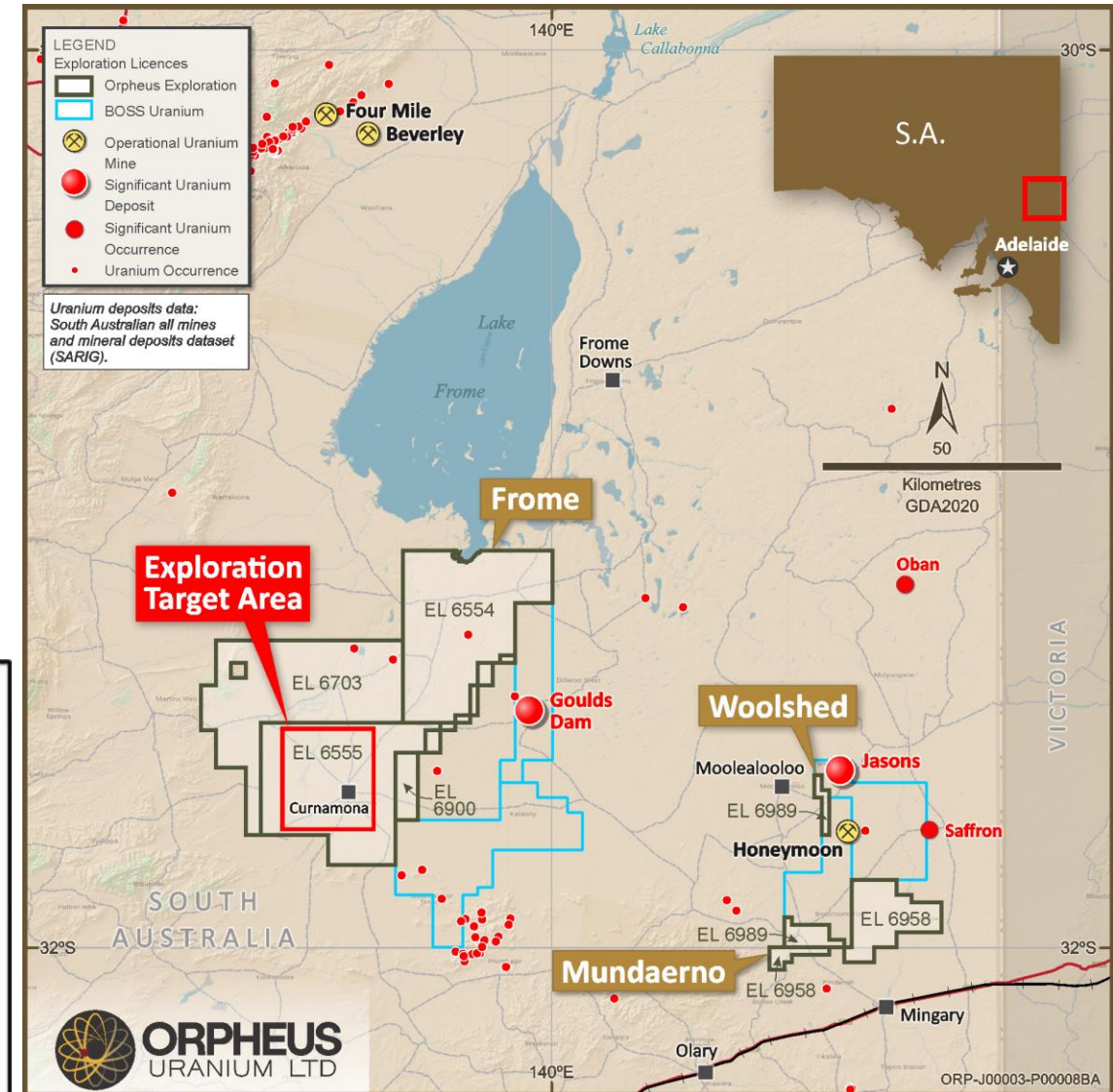


MULTIPLE TARGETS IN MULTIPLE PALAEOCHANNEL SYSTEMS

- ✓ Mechanisms (source transport & trap) for Uranium mineralising systems similar to regional deposits in Namba and Eyre Formations
- ✓ Contains a significant footprint of prospective paleochannels:
Hosts known uranium occurrences – mineral system located
- ✓ Actively exploring - technical reviews, reconnaissance, and stakeholder engagement in preparation for **targeted and dynamic drilling programs**
- ✓ **Erudina Exploration Target Area** 
Initial testing of multiple targets proximal to Goulds Dam (~12km)



AGE	BASIN	STRATIGRAPHIC UNIT	THERMAL MATURITY
CENOZOIC	Lake Eyre Basin (Callabonna Sub-basin, Ind. Poontana Trough)	Coonabine Fm & equivalents	Sub-mature
		Eurinilla Fm & equivalents	
		Willawortina Formation	
		Namba Formation	
		Eyre Formation	
MESOZOIC	Eromanga Basin (Frome Embayment)	Mackunda Formation	Marginally mature
		Oodnadatta Formation	
		Coorikiana Ss	
		Bulldog Shale & equivalents	
		Parabarana Ss	
		Cadna-owie Formation	



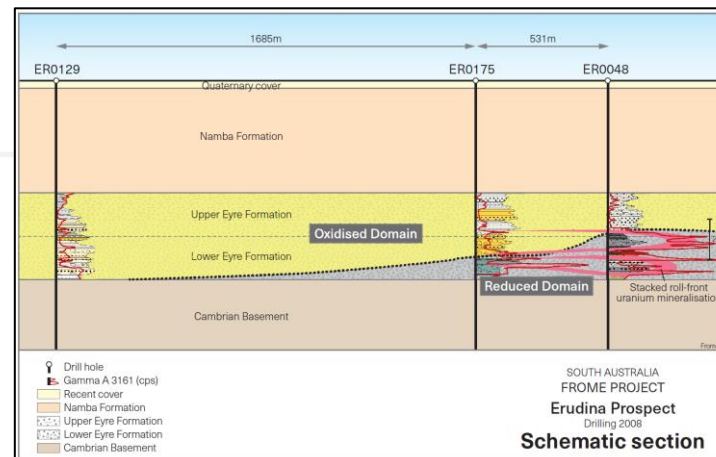
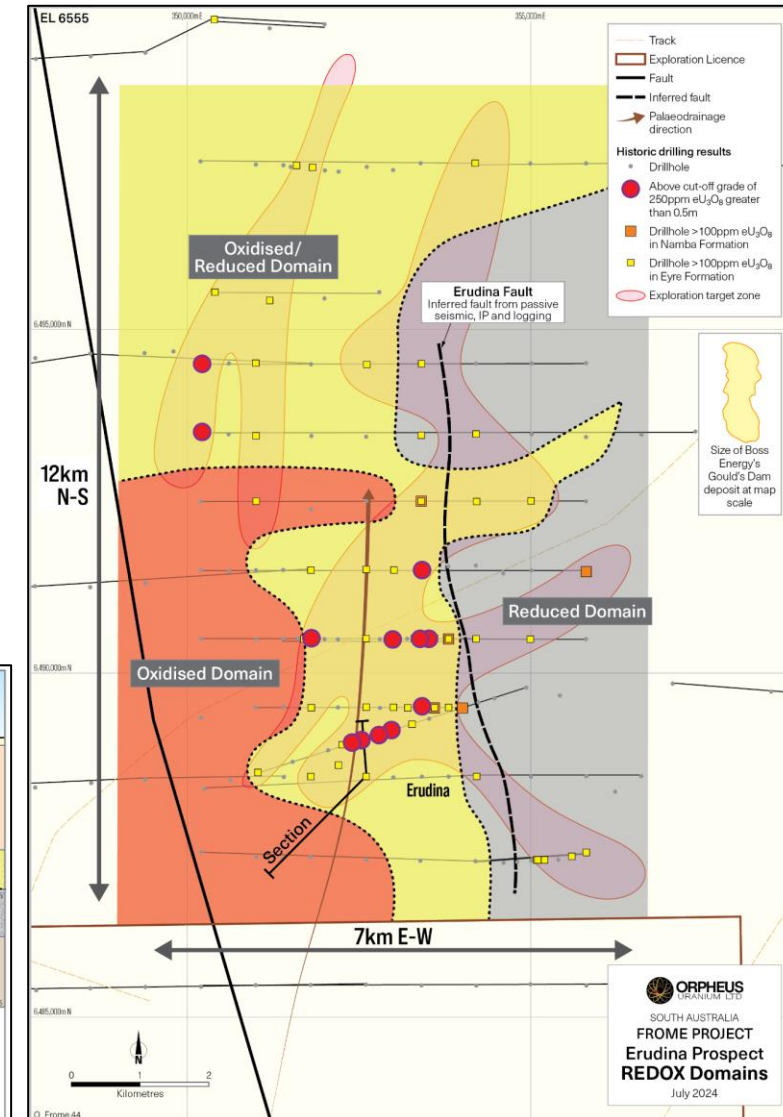
Frome Project - Erudina Prospect

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DEFINED DRILL READY TARGETS AWAITING REGULATORY APPROVAL

- ✓ Exploration target area extends across a 12km N-S by 7km E-W area, Based on wide spaced ~1km drill traverses
- ✓ Preliminarily established from downhole gamma grades, 56 historic drillholes contained >100ppm EqU3O8, with Peak grades >1,500ppm EqU3O8
- ✓ Development of subsurface reduced and oxidised sediments ("REDOX") model as a potential fluid-pathway and vector to higher-grade "roll front" style uranium mineralisation
- ✓ Continued extension of sedimentary REDOX characteristics into Erudina North



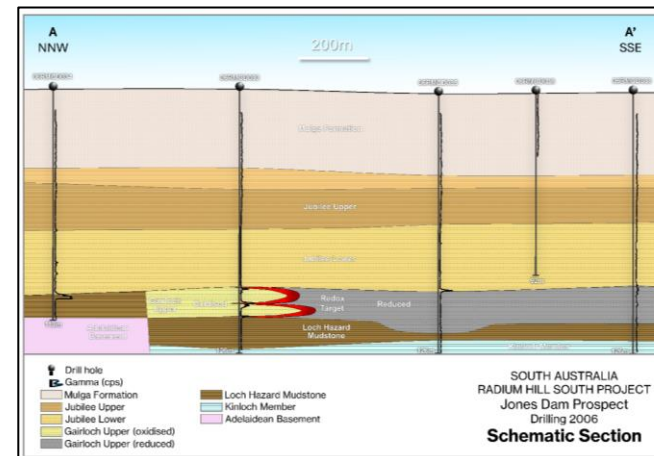
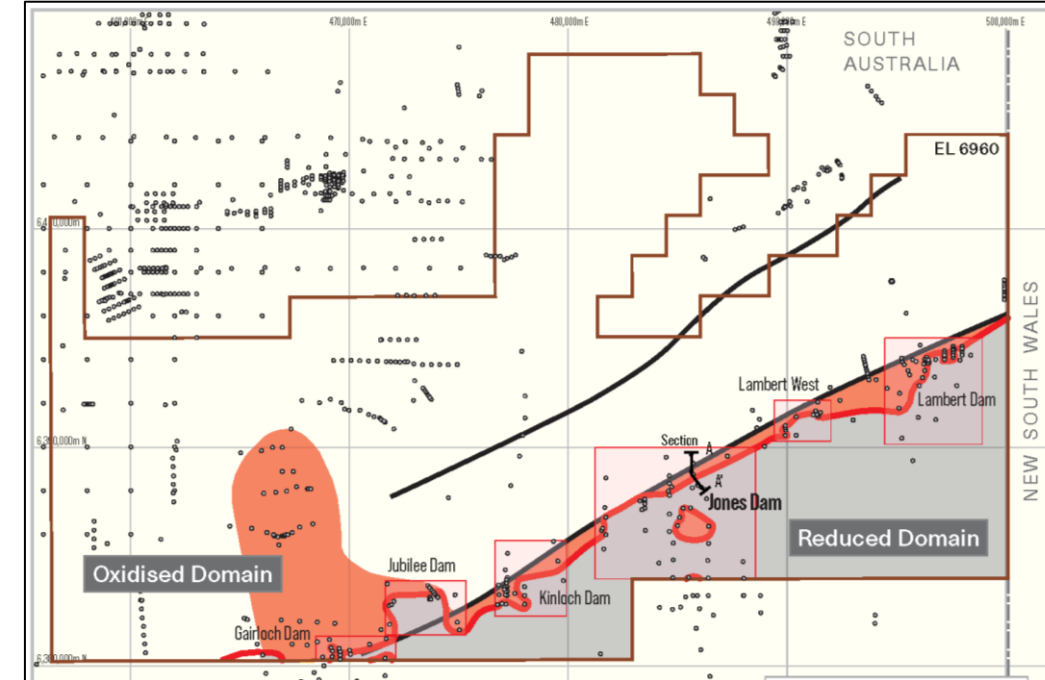
Radium Hill South Project

ADVANCED
EXPLORATION



FIVE EXISTING URANIUM PROSPECTS READY FOR IMMEDIATE FOLLOW-UP

- ✓ **Exploration Licence (EL) granted through competitive tenure**, mineralising system identified, proceeding to advanced on ground activities (i.e., drilling)
- ✓ Located ~20km south of the highly radiogenic region of the historic **Radium Hill Uranium Field 2.6 Mlbs @ 1,310ppm U_3O_8**
- ✓ Hosts **five uranium prospects** that were abandoned due to market conditions in 2011: uranium mineralisation at depths of ~80 to 110 metres
- ✓ Regional NE to SW trending REDOX front identified → refined drill targets based on re-interpretation of historical datasets



Prospect	Historic Results
Gairloch	1.9m @ 400ppm U_3O_8 from 103.8m at the contact between the base of a sand channel and underlying black carbonaceous clay
Jones Dam	2m @ 401ppm U_3O_8 from 86m in a strongly anomalous zone over 5.1m, within steely grey sand
Kinloch Dam	3m @ 507ppm U_3O_8 from 105m in sand below a silcrete layer



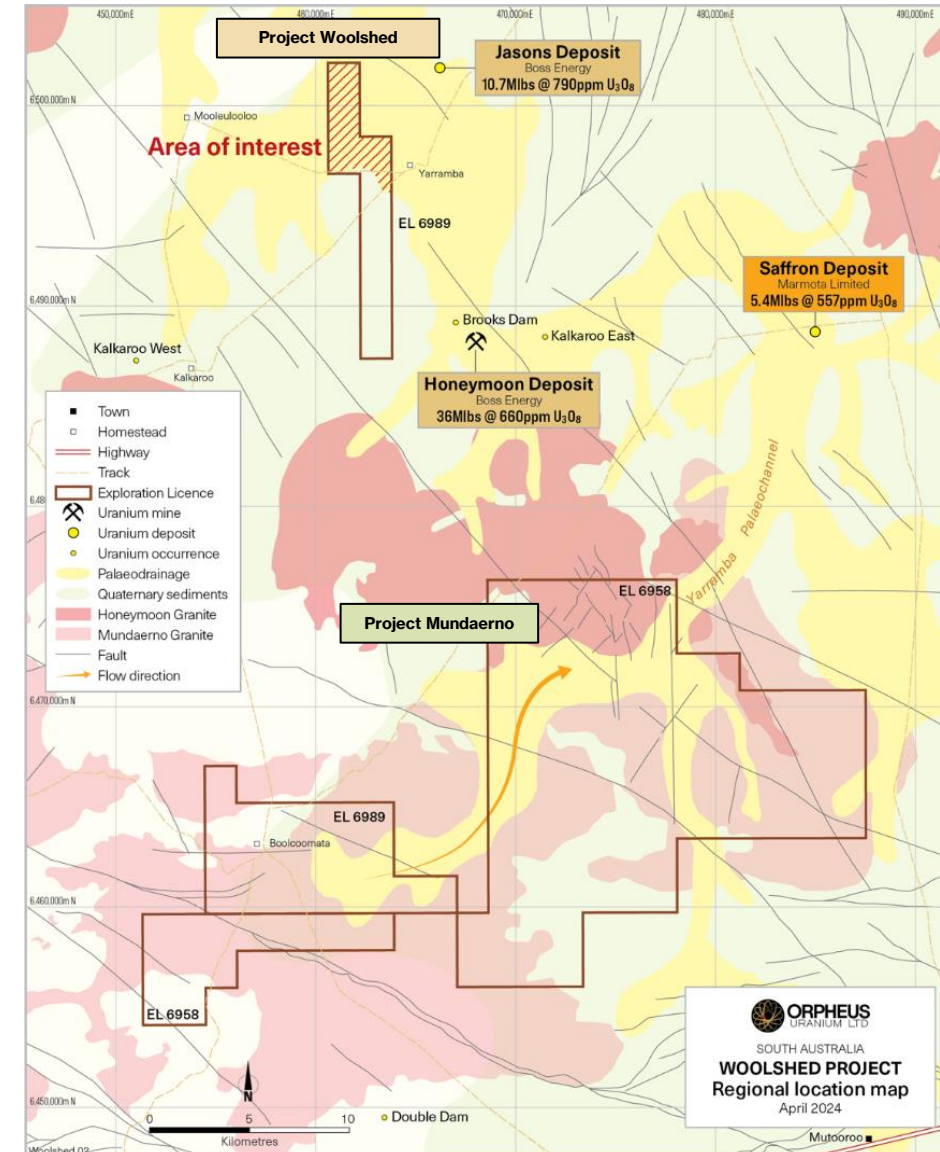
Mundaerno & Woolshed Projects

EARLY
EXPLORATION



DEVELOPING MUNDAERNO & WOOLSHED EXPLORATION PROJECTS

- ✓ Woolshed hosts a bend in the **Yarramba Palaeochannel** just 4km west of **Jasons Uranium Deposit**
- ✓ Mundaerno hosts the head of the **Yarramba Palaeochannel** just 10km south of **Saffron Uranium Deposit**
- ✓ Limited historic exploration conducted in 1970's – importantly selection of holes have intersected the target Tertiary sands, including carbonaceous matter
- ✓ Prized landholding in the Yarramba Palaeochannel: host to >50 Mlbs uranium resources
 - **Honeymoon Uranium Mine 36 Mlbs @ 660ppm U_3O_8**
 - **Jasons Uranium Deposit 10.7 Mlbs @ 790ppm U_3O_8**
 - **Saffron Uranium Deposit 5.4 Mlbs @ 557ppm U_3O_8**
- ✓ Continued assessment of projects value within Orpheus portfolio



Northern Territory

Significant region of historical production where Australia's large, high-grade deposits are discovered

- Targeting “Unconformity” and vein style mineralisation
Very underexplored, particularly in difficult-to-access areas of the Orogen
- Targeting the Pine Creek Orogen
“Australia’s economic Unconformity-Style mineral systems”
- Strategy of building ground position
Strategic play across the Orogen, preparing multiple drill targets for the medium term
- Key Project: Mount Douglas
Preliminary field activities commenced (Q3 2024) → In preparation for subsequent advanced-stage activities (i.e., trenching and drilling)



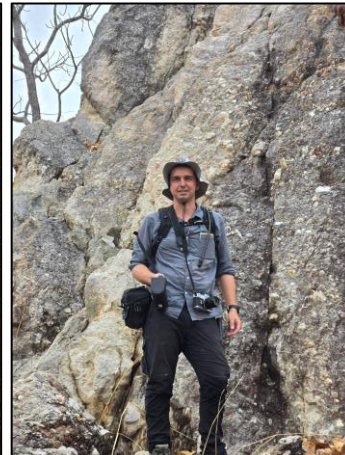
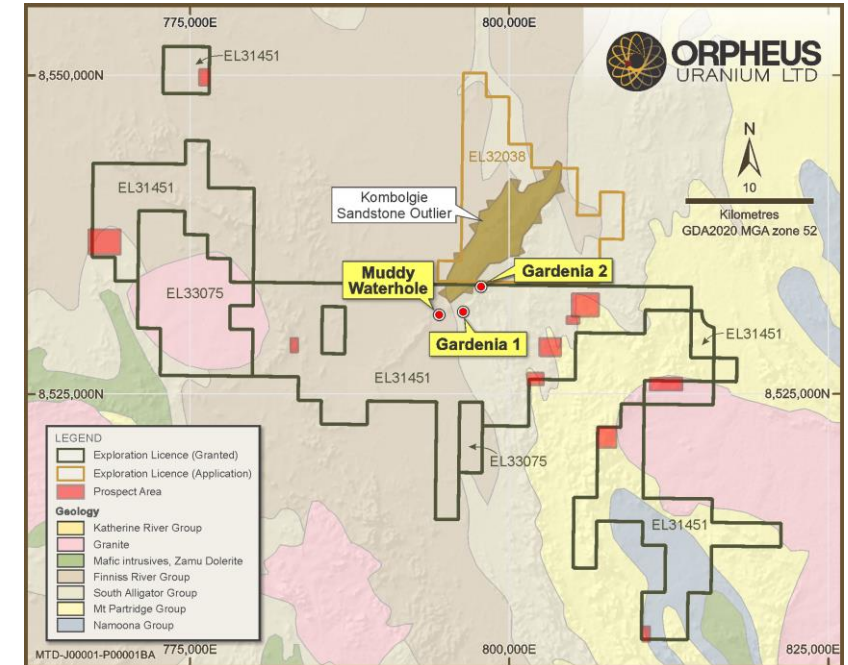
Mount Douglas Project

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EXPLORATION



PROSPECTIVE FOR UNCONFORMITY AND VEIN-STYLE URANIUM MINERALISATION

- ✓ Evidence of **surficial radiometric anomalies** mapped throughout tenure
- ✓ Mapped **unconformity** contact with overlying **Kombolgie Sandstone**
- ✓ **Reconnaissance, rock chip sampling and localised radiometric grids (commenced)**
- ✓ **Collaborative geophysical program with NTGS (commenced)**



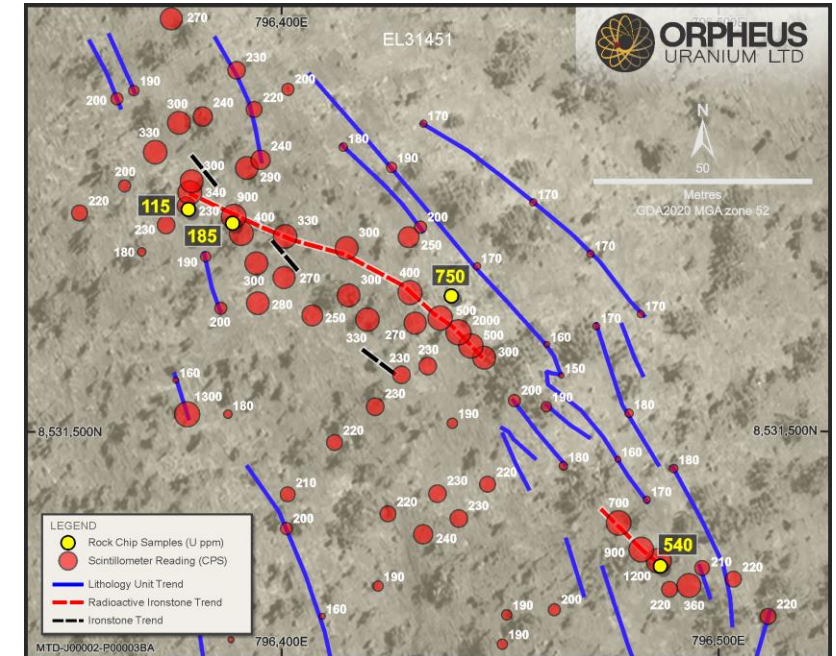
Mount Douglas Project – Gardenia 1

EARLY
EXPLORATION



PROSPECTIVE FOR UNCONFORMITY AND VEIN-STYLE URANIUM MINERALISATION

- ✓ NTGS Government work approvals Mining Management Plan (MMP) granted
- ✓ Reconnaissance, rock chipping, mapping & radiometric gridding being undertaken
- ✓ Evidence of uranium mineralisation in rock chips up to **750ppm U**
- ✓ Infill geophysics to be determined by results of initial NTGS collaborative survey
- ✓ **Advanced stage activities planned**
 - Trenching – Define extents of surface anomalism
 - Drilling of refined targets – subject to preliminary activities



Corporate Summary



CAPITALISATION DATA

Shares on issue

189.8M

Share Price (15 November 2024)

\$0.033

Market Capitalisation

\$6.3M

Cash (31 September 2024)

\$ 2.8M

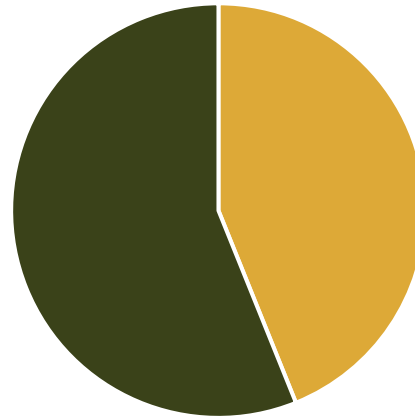
Debt

NIL

Liquid Investments*

\$775k

ASX: ORP Shareholder Spread



56.6%
Top 20 Shareholders

43.4%
Outside Top 20
Shareholders

BOARD & MANAGEMENT

Clint Dubieniecki – CEO

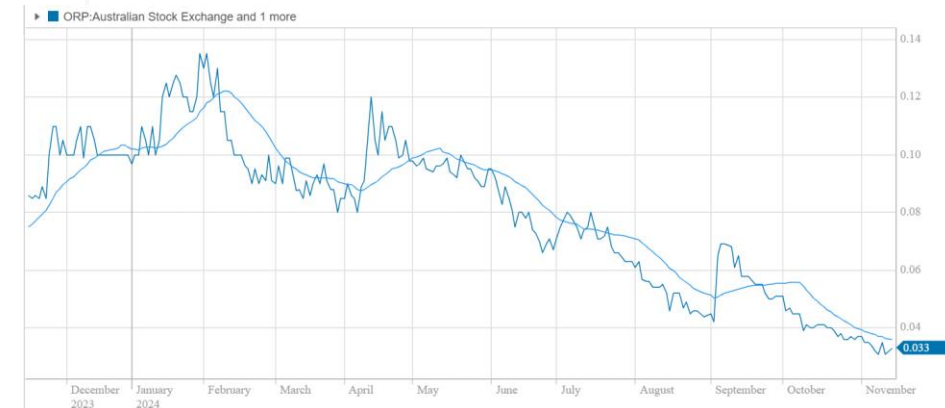
Mick Billing – Non-Exec Chairman

Simon Mitchell – Non-Exec Director

Todd Williams – Non-Exec Director

Richard Willson – Non-Exec Director
& Co Sec

12 Month Share Price



12 Month Uranium Spot Price



*Current valuation of 8.33M shares in ASX:PSC (\$0.093)



Uranium

The right commodity at the right time with very strong uranium price signal, robust demand growth, constrained supply response. Current uranium mine supply structural deficit a long time in the making.



Technical team providing unique insights

Ongoing development of technical team and support, with proven track record in uranium discovery, development and production.



Tenure situated within tier-1 (world-class) locations

Orpheus has developed a tenure portfolio within two of the best global uriferous jurisdictions, the Frome Embayment in South Australia and the Pine Creek Orogen in the Northern Territory.



Prospectivity

Significant recent investor interest in companies which have demonstrated success in this prime location, with Orpheus following up on known mineralisation established by previous explorers.



Developing a Project Pipeline

A company that is actively and strategically developing a project pipeline to best position the business for continued exploration success.

Comparable Projects

Orpheus reports Mineral Resources of uranium mines, deposits or past production that it considers comparable to the style and location of uranium mineralisation in which it explores, as presented on pages 5, 8 and 9 of this presentation, and listed in the table herein.

Project	Development Phase	Location	Company / Operator	Resource Classification	Average Grade (ppm U ₃ O ₈)	Contained Metal (Mlbs, U ₃ O ₈)	Source
Honeymoon Uranium Mine	Mine	Frome Embayment (Callabonna Sub-basin) South Australia	Boss Energy Limited ASX: BOE	Mineral Resource	660	36	Refer to ASX: BOE announcement dated 23 January 2024
Jasons Uranium Deposit	Resource			Inferred Resource	790	10.7	Refer to ASX: BOE announcement dated 23 January 2024
Goulds Dam Uranium Deposit	Resource			Combined Indicated and Inferred Resource	523	25	Refer to ASX: BOE announcement dated 23 January 2024
Saffron Deposit	Resource		Marmota Limited ASX: MEU	Inferred Resource	557	5.4	Refer to ASX: MEU announcement 26 October 2023
Radium Hill Historic Mine	Historic Mine	Curnamona Province	Areas reserved from the Mining Act, 1971 and Opal Act, 1995	Past production	1,310	2.6	Refer to https://minerals.sarig.sa.gov.au/MineralDepositDetails.aspx?DEPOSIT_NO=962
Crocker Well Deposit	Resource	South Australia	Sinosteel Uranium SA Pty Ltd	Combined Indicated and Inferred Resource	281	11.7	Refer to ASX: PNN announcement 28 April 2010

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