

ASX: ORP



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

INVESTOR OVERVIEW  
NOVEMBER 2024

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## **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



## Why Orpheus Uranium?

- ✓ **Junior uranium focused exploration** company with a **portfolio focused** in the two jurisdictions of Australia that allow **uranium exploration** and mining, **South Australia & the Northern Territory**
- ✓ Targeting **tier-1 (world-class) uranium exploration regions**, on tenure with confirmed presence of mineral systems
- ✓ Advancing 100% owned, advanced uranium exploration projects towards advanced-stage activities (i.e., trenching & drilling)
- ✓ **CATALYST → Strategic development** of the **portfolio** which enables exploration success whilst positioning for market growth → **Pursuing geologically relevant opportunities**
- ✓ **USE OF FUNDS →** Developing core assets to **advanced staged activities** / Acquisition of project(s) prioritising drill ready tenure within established mineralising jurisdictions
- ✓ **TIMING OF ACTIVITIES → 2025 Q2 – Q4** Drilling programs within at least two of the South Australian projects and advanced stage activities on Mt Douglas

# Indicative Field Schedule 2025-26



	2025				2026	
PROJECT	Q1	Q2	Q3	Q4	Q1	Q2
#Frome Project	Geological Interpretation, Native Title Negotiations & Work Approvals		DRILLING	Geological Interpretation, Heritage Clearance & Work Approvals		DRILLING
#Radium Hill South	Geological Interpretation, Geophysics, Native Title Negotiations & Work Approvals		Heritage Clearance, Work Approvals	DRILLING	Geological Interpretation, Heritage Clearance & Work Approvals	
^Mount Douglas	Geological & Geophysical modelling, & Heritage Clearance	TRENCHING & DRILLING	Geological Interpretation			
Mundaerno	Geological Interpretation, Native Title Negotiations & Work Approvals		Heritage Clearance, Work Approvals	DRILLING	Geological Interpretation, Heritage Clearance & Work Approvals	
*Business Development	Ongoing review of new opportunities → Subsequent Geological Interpretation, Heritage & Access Agreements, Work Approvals & On-Ground Activities					

# Frome & RHS Project progressing through Native Title

^ Mt Douglas activities subject to dry season

\*Continuing evaluation of multiple geologically relevant opportunities to develop 'Orpheus Project Pipeline'

NOTE: Timeline should be considered a 'forward-looking statement'. All activities are subject to change based upon updated geological interpretation/preliminary activity results, regulatory approvals, accessibility and/or project acquisition.



# The Nuclear Cycle & Discoveries Through Time

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

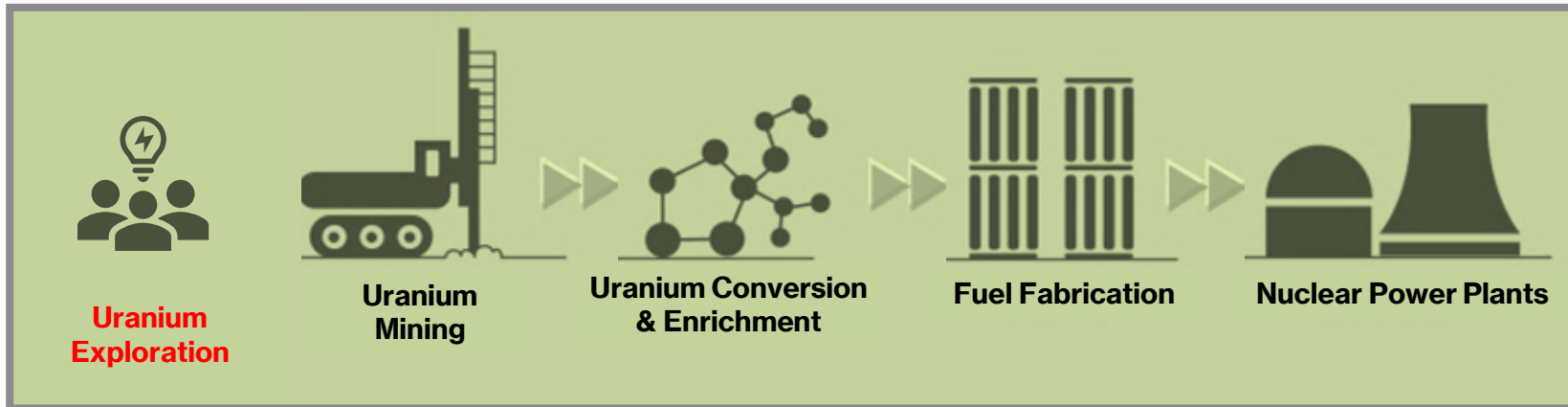


Image modified from: <https://www.orano.group/en/unpacking-nuclear/all-about-nuclear-energy>

## 1950s & 1970s

- 1949 Rum Jungle
- 1953 South Alligator River
- 1969 Ranger
- 1969 Beverly
- 1970 Koongarra
- 1970 Narbalek
- 1971 Jabiluka
- 1972 Honeymoon

## 2000s

- 2005 Four Mile East
- 2005 Four Mile West
- 2007 Blackbush
- 2008 Thunderball
- 2009 Pepegona
- 2011 Pannikan

## 2020s

WHEN WE EXPLORE FOR URANIUM, WE DISCOVER URANIUM!

Year of discovery for select South Australian & Northern Territory Uranium Deposits/Prospects

Sourcing Uranium for Defence

Development of nuclear energy

Renaissance of nuclear power

2011 Fukushima

Decrease in U stockpiles

Major events driving Uranium Markets

# 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



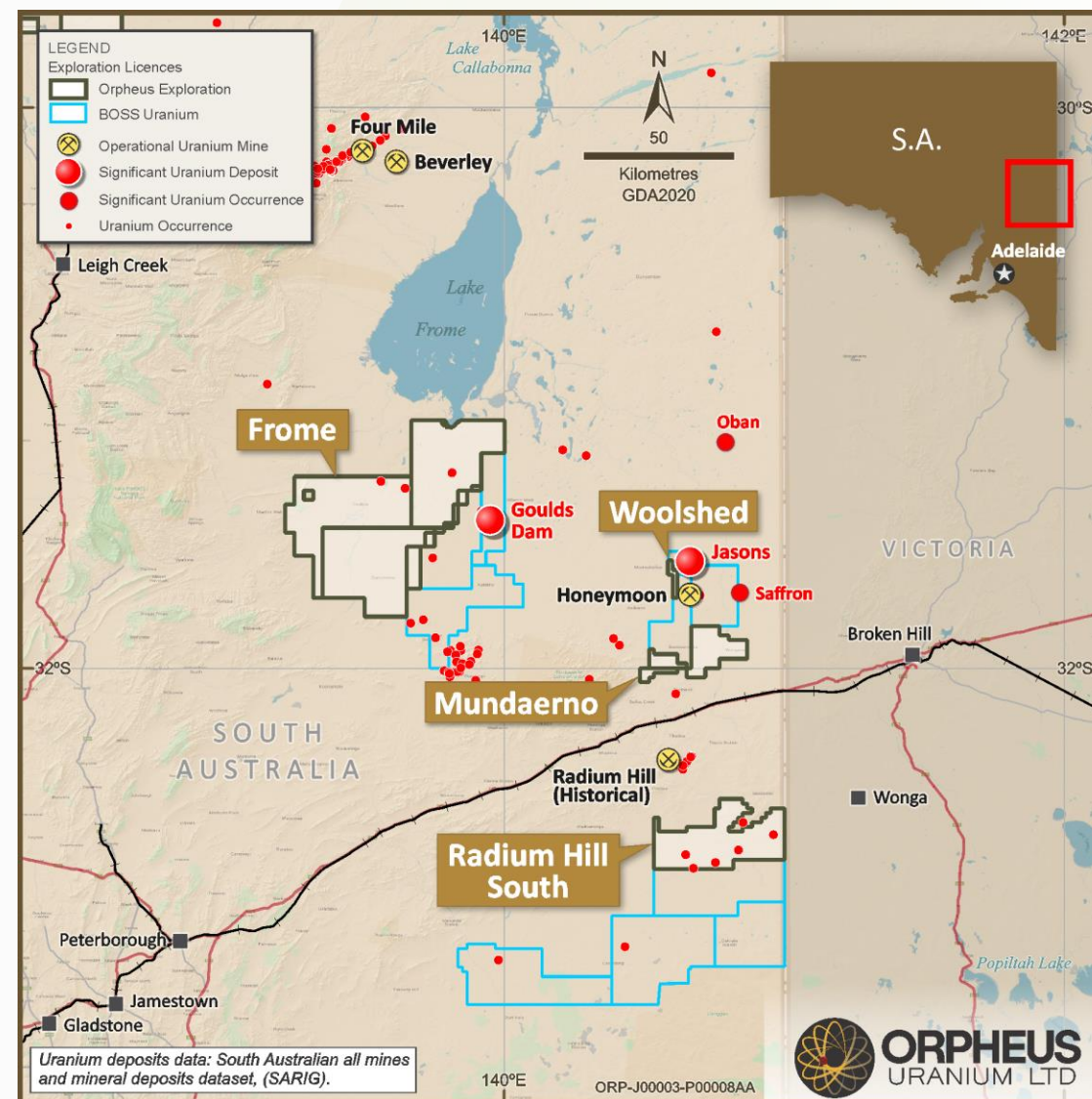


# Key South Australian Projects

## 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

ADVANCED  
EXPLORATION

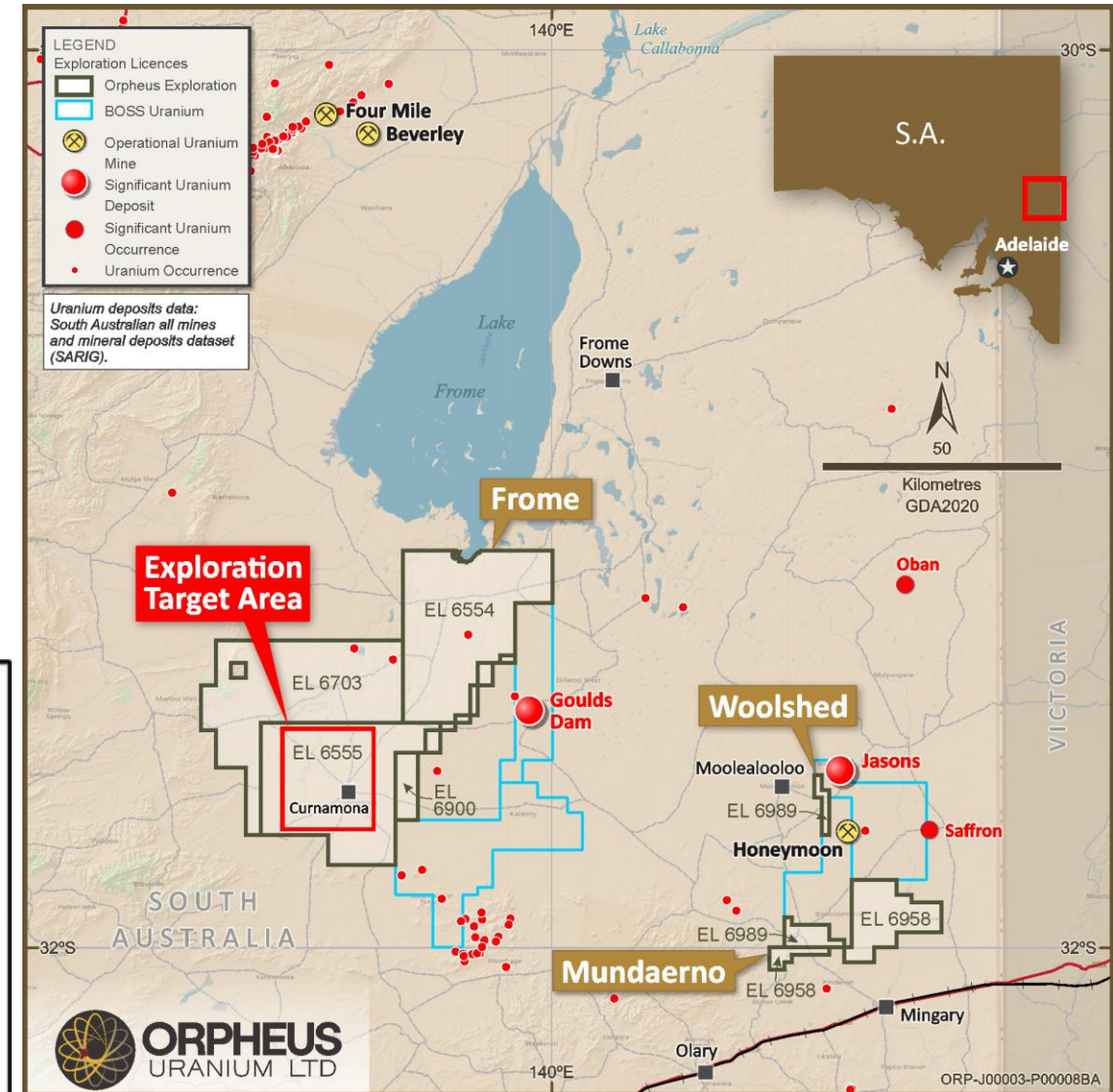


## MULTIPLE TARGETS IN MULTIPLE PALAEOCHANNEL SYSTEMS

- ✓ 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)	Coonabrine 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	





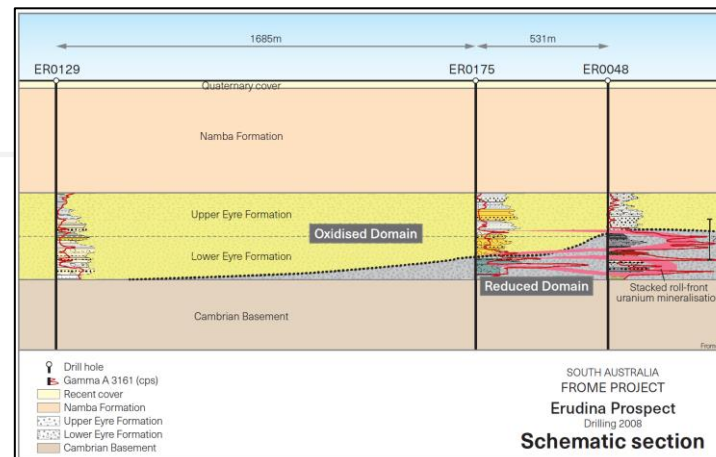
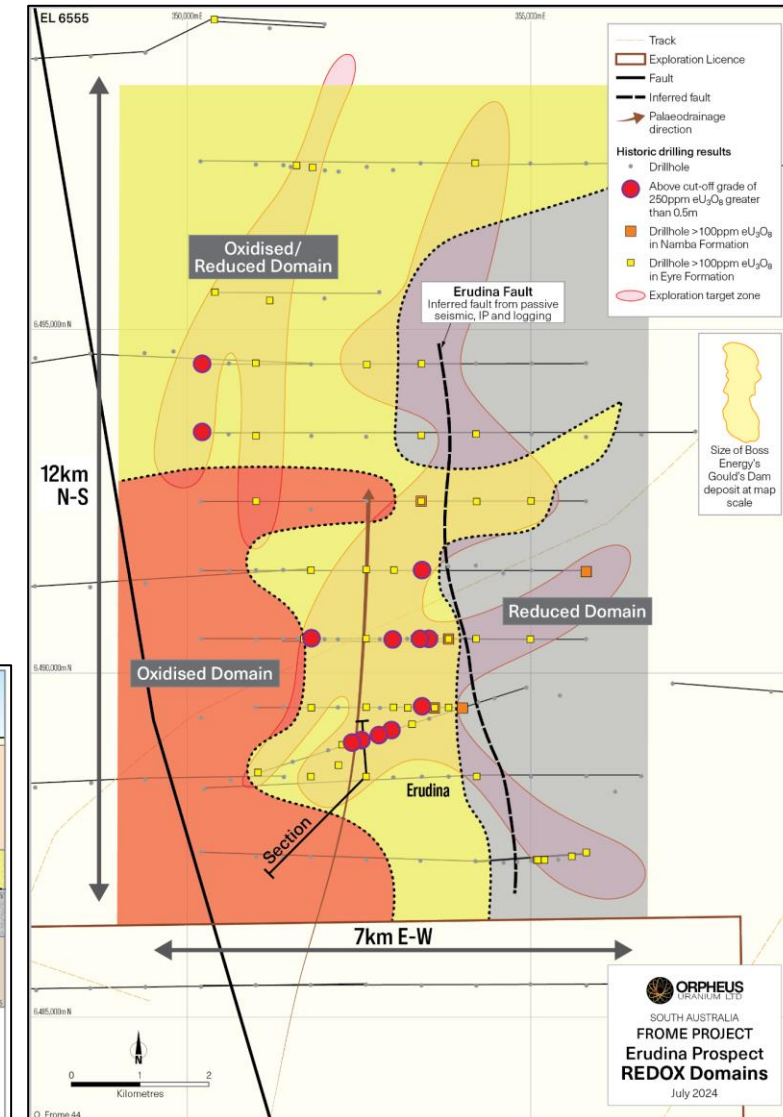
# Frome Project - Erudina Prospect

ADVANCED  
EXPLORATION



## 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



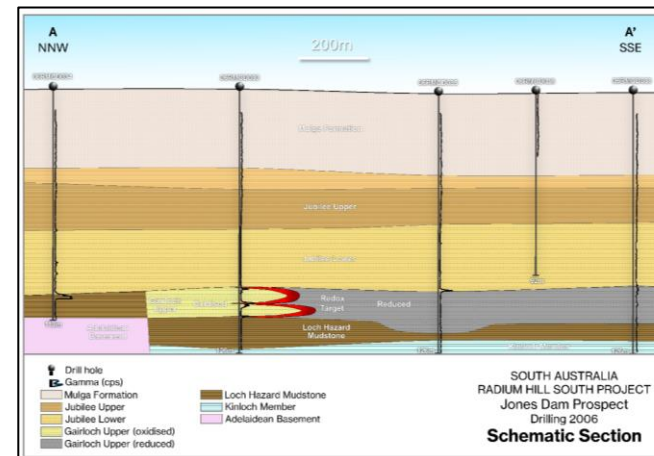
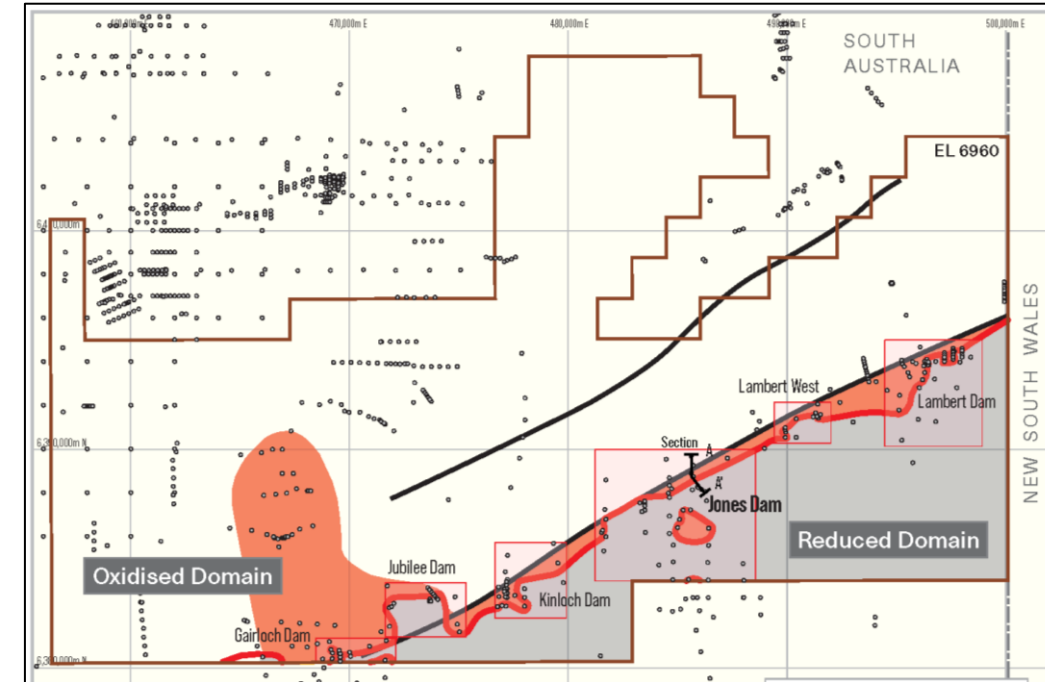
# Radium Hill South Project

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





# 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)





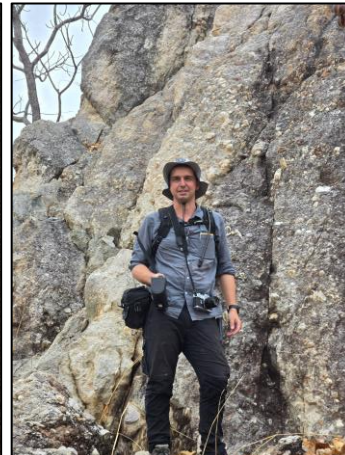
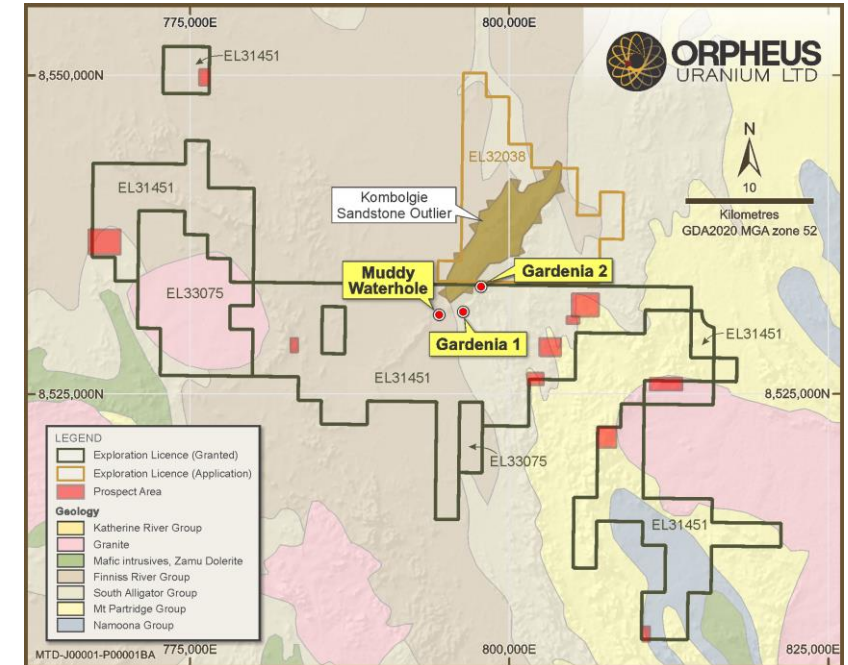
# Mount Douglas Project

EARLY  
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)**





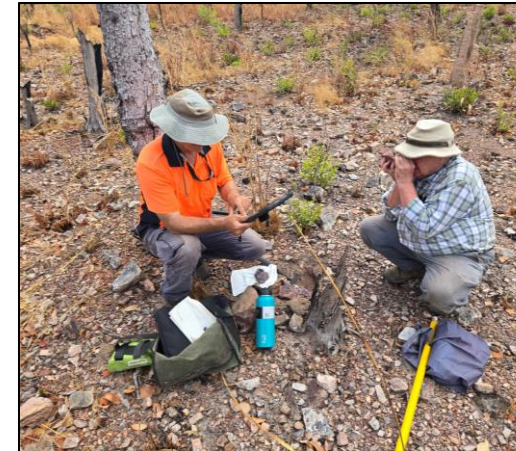
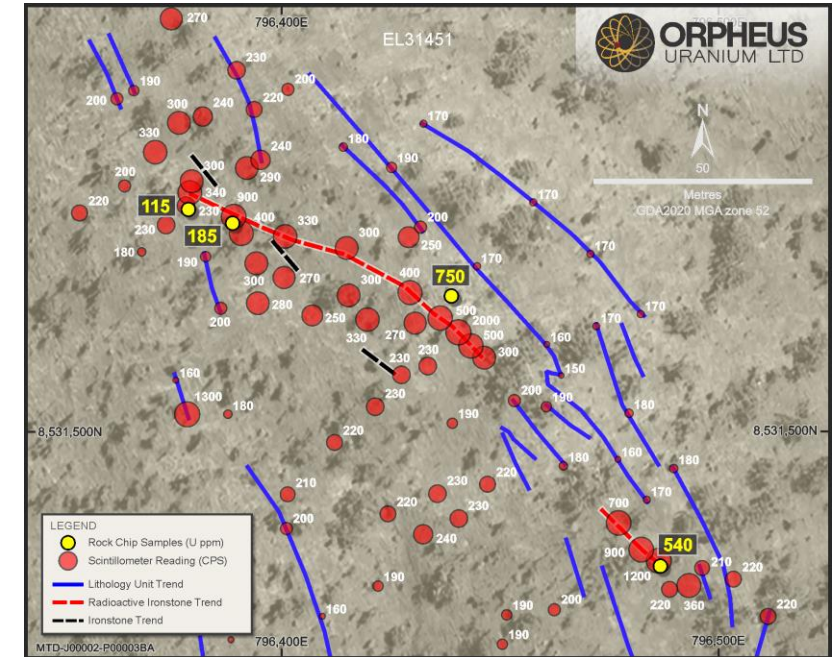
# Mount Douglas Project – Gardenia 1

EARLY  
EXPLORATION

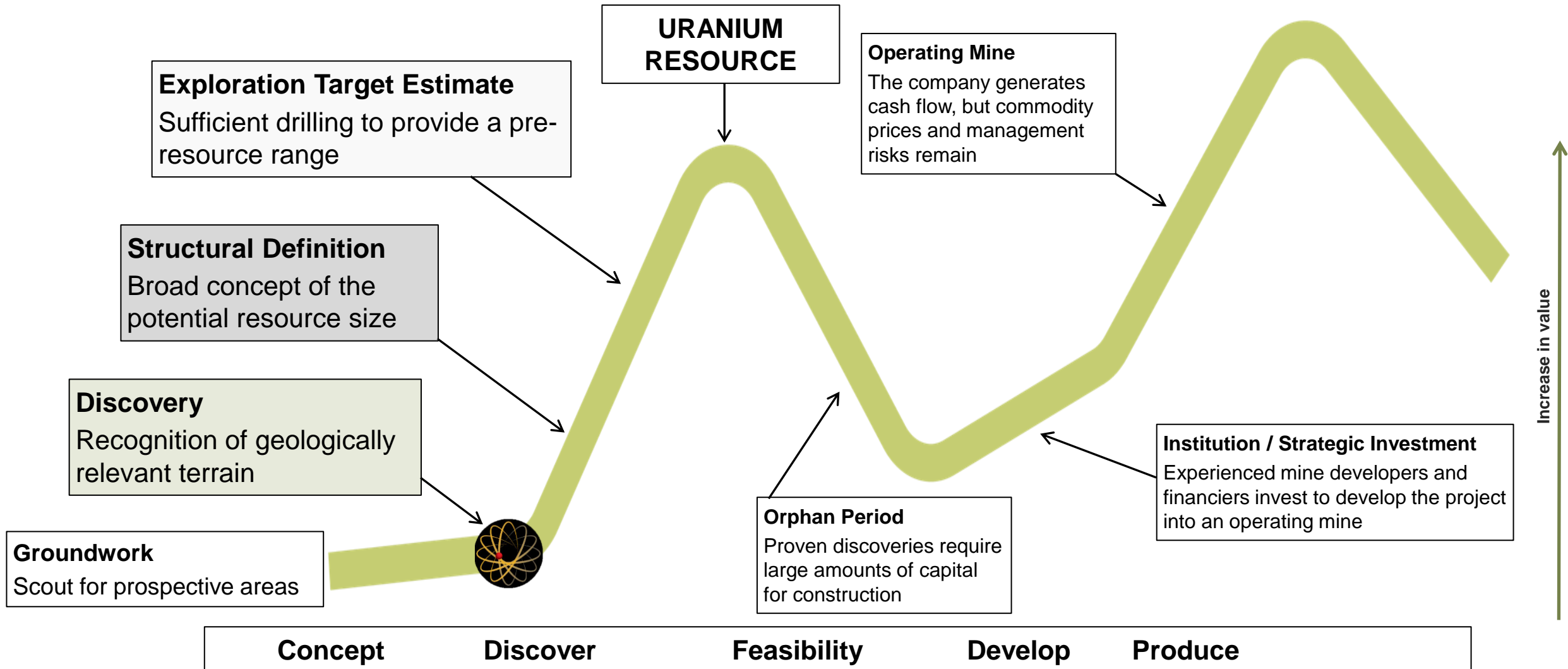


## PROSPECTIVE FOR UNCONFORMITY AND VEIN-STYLE URANIUM MINERALISATION

- ✓ 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



# From Discovery to Resource





# Corporate Summary



## CAPITALISATION DATA

Shares on issue

**189.8M**

Share Price (23 November 2024)

**\$0.041**

Market Capitalisation

**\$7.8M**

Cash (30 September 2024)

**\$ 2.8M**

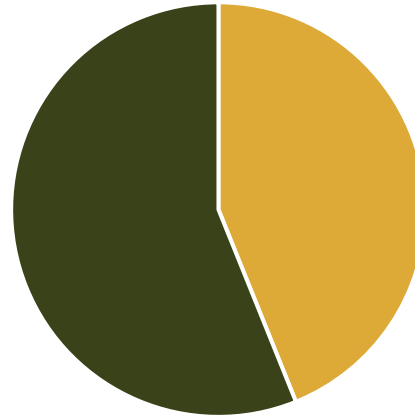
Debt

**NIL**

Liquid Investments\*

**\$805k**

## ASX: ORP Shareholder Spread



**56.7%**  
Top 20 Shareholders

**43.3%**  
Outside Top 20  
Shareholders

## BOARD & MANAGEMENT

**Clint Dubieniecki** – CEO

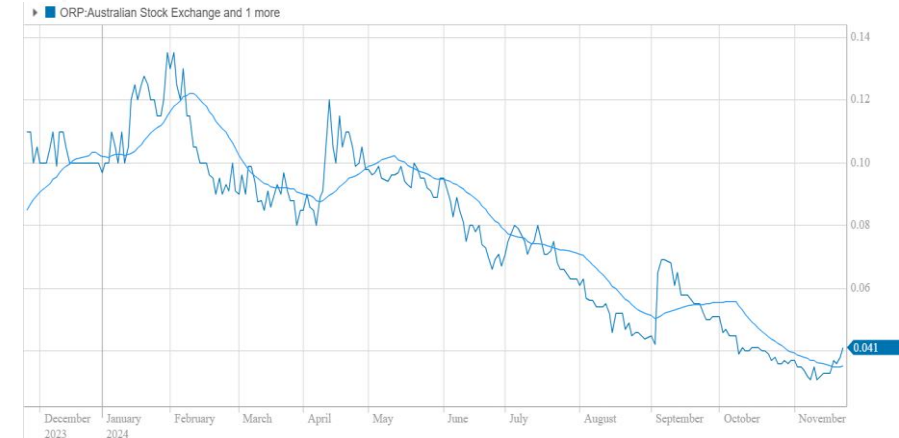
**Mick Billing** – Non-Exec Chairman

**Simon Mitchell** – Non-Exec Director

**Todd Williams** – Non-Exec Director

**Richard Willson** – Non-Exec Director  
& Co Sec

## 12 Month Share Price



## 5 Year Uranium Spot Price (USD/Lbs)



\*Current valuation of 8.33M shares in ASX:PSC (\$0.097)



## 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 <sub>3</sub> O <sub>8</sub> )	Contained Metal (Mlbs, U <sub>3</sub> O <sub>8</sub> )	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 <a href="https://minerals.sarig.sa.gov.au/MineralDepositDetails.aspx?DEPOSIT_NO=962">https://minerals.sarig.sa.gov.au/MineralDepositDetails.aspx?DEPOSIT_NO=962</a>
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



# Contact Us

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Registered Office:

79 King William Road  
Unley, South Australia 5061

**P.** +61 8231 0381

**E.** [info@orpheusuranium.com](mailto:info@orpheusuranium.com)

**W.** [www.orpheusuranium.com](http://www.orpheusuranium.com)