



ORPHEUS
URANIUM LTD

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QUARTERLY ACTIVITIES REPORT

MARCH 2025

CEO's Message to Shareholders

The March quarter marked a foundational period for Orpheus Uranium, during which we laid some of the critical groundwork in our strategy of securing strong ground positions in Australia's most prospective uranium regions and building Orpheus into a leading Australia-focused uranium explorer.

Our focus has been on identifying tenements near known deposits, within uranium mining-friendly jurisdictions, and ones that add exploration value or efficiency to our existing projects—ensuring that Orpheus not only has multiple opportunities for discovery success but is also positioned in areas where future projects can be advanced through to production and can take advantage of the rising demand for uranium in an expanding nuclear energy industry.

The results of this hard work were realised after the end of the quarter with the announcement of the acquisition of the Pirie Basin Uranium Project. The Pirie Basin has long been recognised as one of the most favourable settings for sedimentary-style uranium mineralisation, with all the key geological ingredients required for the formation of economic deposits. The addition of this project to our portfolio provides Orpheus exposure to three of the most highly prospective and proven uranium provinces in South Australia—the Pirie, Frome and Murray (Radium Hill) basins — each having significant potential for high-quality uranium discoveries.

The acquisition of the Pirie Basin Project also sets the stage for an exciting exploration program across multiple projects for the remainder of 2025.

I'd like to thank our shareholders for their ongoing support and look forward to sharing further progress as we seek to unlock the potential of these premier uranium regions.

- CEO Clinton Dubieniecki

Quarterly Report

FOR PERIOD ENDING 31 MARCH 2025

ASX: ORP



QUARTERLY HIGHLIGHTS

Orpheus Uranium Limited (ASX: ORP) (*Orpheus* or *the Company*) is pleased to report on its activities and cash flow for the quarter ending 31 March 2025.

Pirie Basin Project

- A successful due diligence process and negotiations during the March quarter secured the 100% acquisition of the Pirie Basin Project announced after the end of the quarter.
- This acquisition was announced alongside a well-supported \$1.25 million capital raising that will fund the commencement of the exploration program on the Pirie Basin Project, following the completion of the sale agreement.

Frome Project

- Continued engagement with relevant stakeholders, including representatives of Adnyamathanha Traditional Lands Association (ATLA), to define and commence the required processes which will enable regulatory approvals to be gained and subsequent advanced stage exploration activities to commence.

Radium Hill South

- Ongoing engagement with Wilyakali Native Title Aboriginal Corporation to complete required processes to progress towards undertaking advanced stage exploration activities.

Mount Douglas

- Ongoing analysis and modelling of results of semi-regional gravity survey completed over the tenure in collaboration with the NTGS.

Business Development

- Extensive review of geologically relevant projects and generative areas for uranium exploration to refine the current tenement portfolio.

Corporate

- Sale of 4 million Prospect Resources Ltd (ASX: PSC) shares for gross proceeds of \$0.426 million.
- Orpheus Uranium held an Extraordinary General Meeting (EGM) to refresh placement capacity and to gain shareholder approval to issues options associated with the capital raise announced on 28 November 2024.
- Cash and listed investments of \$4.13 million at the end of the March 2025 quarter. Subsequent to the quarter Orpheus completed an equity raising for an additional \$1.25 million before costs.

ORPHEUS URANIUM LIMITED

CAPITAL STRUCTURE

Issued shares: 237.3m
Debt: nil
Unlisted options: 19.5m
Cash on hand: \$3.57m
Liquid investments: \$0.56m

DIRECTORS

Mick Billing - Non-Exec Chairman
Simon Mitchell - Non-Exec Director
Richard Willson - Non-Exec Director & Company Secretary
Todd Williams - Non-Exec Director

ASX: ORP

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URANIUM PROJECTS (SA)

Frome, SA 100%
Radium Hill South, SA 100%
Mundaerno, SA 100%
Woolshed, SA 100%
Marree, SA 100%

URANIUM PROJECTS (NT)

Mount Douglas, NT 100%
Woolner, Marrakai, NT 100%
Ranger NE, NT 100%
Conways, NT 100%
T-Bone, NT 100%

Uranium Assets, South Australia and Northern Territory

Orpheus is an active explorer with uranium projects in proven uranium mining jurisdictions of South Australia and the Northern Territory (see Figure 1) prospective for large Tier-1 discoveries.

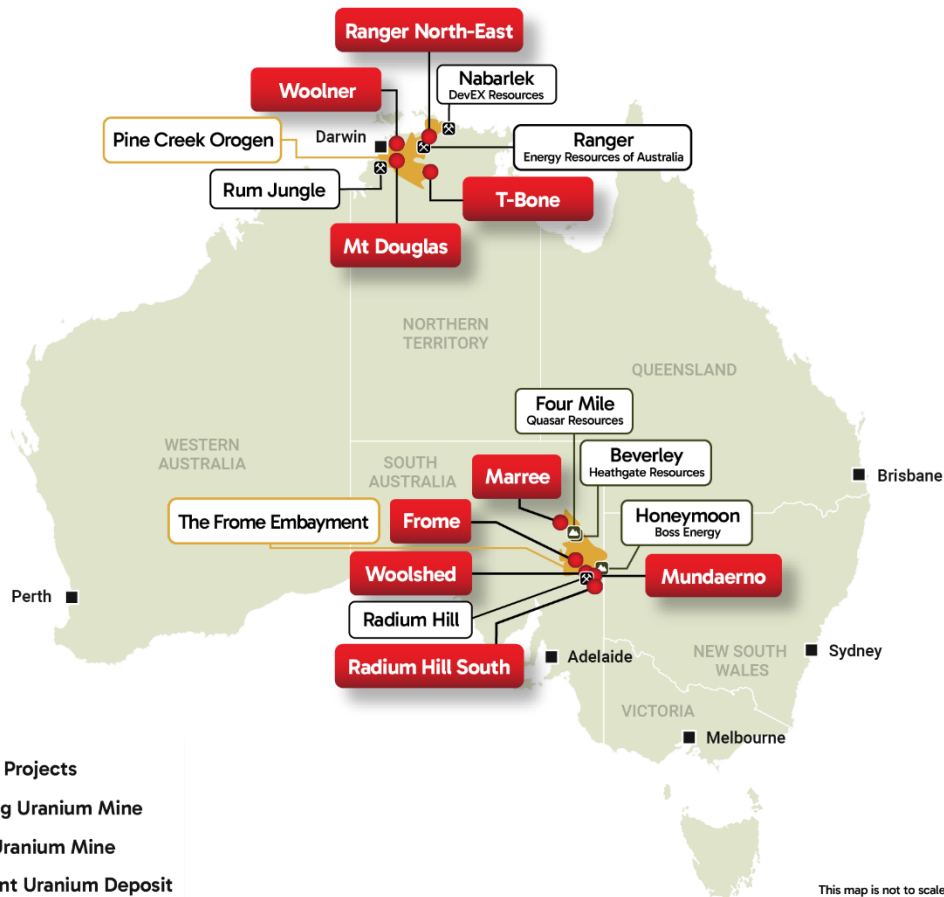


Figure 1: Location map of uranium assets owned by Orpheus located in South Australia and Northern Territory (not to scale)

South Australia – Sedimentary-Style Uranium (General)

Orpheus's South Australian tenure is strategically distributed across some of the most prospective regions for uranium exploration in the state. The company's landholdings span what could be considered three of the top five most promising regions for sedimentary-style uranium discovery in South Australia, underscoring Orpheus's strong competitive position in the sector (see Figure 2).

Orpheus's Frome Project is located near, or adjacent to, the Billeroo Palaeochannel within the highly prospective Callabonna Sub-Basin. This region has long been recognised for its potential to host significant uranium deposits, and the proximity to Boss Energy's Gould's Dam deposit bolsters the potential for exploration success.

Orpheus's Radium Hill South Project is situated on the northern margins of the Murray Basin. The location of Radium Hill South is particularly notable as it is near what could be considered the source rocks for the basin, in the historic Radium Hill deposit. This proximity to the potential source rocks

significantly increases the likelihood of discovering concentrated uranium mineralisation, making the project an exciting target for future exploration.

The Pirie Basin Project (acquired post end of quarter), located in the underexplored western Pirie Basin, is another key asset in Orpheus's portfolio. This region is home to Alligator Energy's Samphire Uranium Project, which has already demonstrated significant uranium mineralisation. The Pirie Basin is largely underexplored, offering Orpheus a unique opportunity to explore an area with substantial discovery potential, further complemented by the presence of Samphire, which highlights the region's fertile uranium geology.

Extending beyond Orpheus' tenure and within the Callabonna Sub-Basin the areas surrounding the Beverley/Four Mile uranium deposits in the Northern Flinders and Honeymoon/Jasons uranium deposits in the Yarramba Palaeochannel are both highly prospective regions, however, are tightly held by Heathgate Resources and Boss Energy, respectively. While these areas are tightly held, Orpheus's holdings in nearby, prospective regions position the company well to capitalise on future exploration and development opportunities as the demand for uranium continues to grow.



Figure 2: Orpheus Uranium's South Australian project locations relative to South Australia's known resources and the associated tenement holders (HGR = Heathgate Resources Pty Ltd; BOE = Boss Energy Ltd.; AGE = Alligator Energy Ltd.)

Pirie Basin Project – Overview

Project announced subsequent to the end of the quarter

- 100% acquisition of 1,100km² landholding (subject to completion of certain conditions precedent considered standard for a transaction of this nature) from FMG Resources Pty Ltd, a wholly owned subsidiary of Fortescue Ltd (ASX: FMG) (“Fortescue”), which is adjacent to Alligator Energy’s (Alligator, ASX: AGE) Sapphire Uranium Project with 17.5Mlbs Mineral Resource¹.
- Tenements host sediments of the highly prospective Pirie Basin underlain by fertile source rocks of the highly uraniferous Gawler Craton Hiltaba Suite
- The Pirie Basin is one of only two basins in South Australia to host sedimentary-style uranium deposits that have active advanced-staged feasibility or producing in-situ recovery uranium projects.
- Up to ~535 ppm U₃O₈ (e.g., COD002) in historical drill holes, validating the source potential of the local Hiltaba Suite Granites and potential for new discoveries within the project.

Frome Project – Overview

- Advanced exploration project with 73,650m of historical regional and prospect drilling, mostly (~80%) completed by French nuclear company Areva (now Orano) between 2004 to 2014.
- Strategically located 12km west of Boss Energy’s (ASX: BOE) Gould’s Dam project containing a JORC-compliant resource of 25Mlbs indicated and inferred².
- Widespread uranium mineralisation defined within the Erudina paleochannel over an area of 12km by 7km, with 56 drill holes intersecting uranium mineralisation with values over 100ppm EqU in wide 1 km spaced drill traverses (see ASX announcement, 18 December 2023).
- Peak uranium grades in fertile Namba and Eyre Formation sediments of >1,500ppm EqU.

In detail

Achievements for the Frome project during the March 2025 quarter include:

- Engagement with relevant stakeholder including representatives of the Adnyamathanha Traditional Lands Association (ATLA) to complete required processes to allow advanced stage exploration activities to commence.

Next Steps

- Progressing through requirements to obtain regulatory approval for advanced stage activities on the tenure. Continued interpretation of available datasets to refine on ground activities.

1: Sapphire Uranium Project – Alligator Energy Limited ASX: AGE - Successful upgrade of Indicated Mineral Resource for the Blackbush Deposit, Sapphire Uranium Project, South Australia. Refer to ASX: AGE announcement dated 7 December 2023

2: Goulds Dam Uranium Deposit – Resource - Boss Energy Limited ASX: BOE - Combined Indicated and Inferred Resource – Average Grade 523 ppm U₃O₈ with Contained 25 Mlbs. U₃O₈. Refer to ASX: BOE announcement dated 23 January 2024

Radium Hill South Project – Overview

- Large 797km² exploration licence strategically located 20km south of the historic Radium Hill Uranium Mine (an important source of basement-hosted uranium mineralisation).
- Advanced greenfields project developed by Mega Hindmarsh in 2006.
- Five advanced prospects with proven potential for shallow sediment-hosted uranium mineralisation.
- Potential for new 'step change' discovery in emerging sedimentary Palaeochannel system.

In detail

Achievements for the Radium Hill project during the March 2025 quarter include:

- Engagement with representatives of the Wilyakali Native Title Aboriginal Corporation along with other stake holders to progress access agreements and enable advanced on-ground activities.

Next Steps

- Continued engagement with Wilyakali Native Title Aboriginal Corporation and other key stakeholders to enable commencement of on-ground activities, including Heritage Surveys and drilling.
- A geophysical survey will assist the target sediments and basement structures, further refining areas for drill testing.



Photo: Orpheus Uranium's ground in South Australia (Frome)

Northern Territory – Unconformity-Style Uranium (General)

Orpheus holds strategic ground in Northern Territory (see Figure 3) prospective for unconformity-style uranium similar to the Tier-1 Ranger deposit (owned by Energy Resources of Australia (ASX: ERA)). The Company's current focus is advancing the Mount Douglas project from target definition to advanced-stage activities including drilling.

Orpheus is actively assessing opportunities to enhance the Northern Territory portfolio. During the quarterly period Orpheus applied for exploration licence (EL) 34013 – Conways, located south-south-east of the Companies T-Bone application.



Figure 3: Location map of uranium assets owned by Orpheus located in Northern Territory

Mount Douglas - Overview

- The Mount Douglas project is comprised of two exploration licences and an adjoining application (see Figure 3). Tenure is located on the eastern flank of the Rum Jungle Mineral Field (RJMF).
- This field was the first major uranium mining and processing centre in Australia, and is contained within the Pine Creek Orogen, within which the most recent production of Australian unconformity-style uranium mineralisation has occurred.

In detail

Achievements for the Mount Douglas project during the March 2025 quarter include:

- Processing and modelling of the nearly 1200 ground gravity stations acquired in collaboration with the NTGS.
- Planning of infill gravity stations over areas of interest, to undertake a follow-up survey in 2025 to further refine drilling target area.
- Continued engagement with relevant stakeholders to prepare for on-ground activities commencing during the dry season. The implementation of the program will be dictated by the results of previous exploration activities and land accessibility.
- Notably Q1 does not allow for on-ground access due to the wet-season.

Next Steps

- Processing of regional geophysics to refine areas for infill activities to define masked unconformity-style targets.
- Commence advanced-stage activities over nominated areas subject to accessibility, including completion of the wet season.



Photo: Orpheus Uranium's ground in Northern Territory (Mt Douglas)

Business Growth – Uranium (General)

Orpheus maintains an active watch and engages with companies throughout Australia that hold tenure within desired geological settings conducive to uranium mineralisation and consistent with the business strategy.

Corporate Activity

General Meeting

On 13 February 2025, Orpheus held an Extraordinary General Meeting with all resolutions being carried.

Sale of Shares

During the Quarter, Orpheus completed the sale of 4 million Prospect Resources Ltd (“Prospect”, ASX: PSC) shares for total consideration of \$0.426 million (before costs). The company retains 4.33 million shares in Prospect along with 6.25 million call options to acquire Prospect ordinary shares at 15 cents per share, expiring 11 April 2027. Orpheus also has a right to a \$2.5 million milestone payment from Prospect upon the release of a JORC resource of at least 500kt of contained copper with a cut-off of 0.5% at the Lumwana West Project.

Cash and Investments

The total value of cash and investments in ASX listed companies on 31 March 2025 was approximately \$4.13 million, comprising:

- Cash at bank \$3.57 million
- Shares in listed companies (liquid investments) \$0.56 million

Other

ASX Listing Rule 5.3.1 - Exploration and evaluation expenditure incurred during the quarter was \$0.21 million. Details of exploration activities during the quarter are set out in this report.

Expenditure	A '000
Tenement statutory fees	\$56
Tenement management, administration & logistics	\$42
Geophysics	\$40
Technical & office studies	\$22
Land access	\$20
Salaries and wages	\$30
Total	\$210

ASX Listing Rule 5.3.2 - There was no production or development expenditure incurred during the quarter.

ASX Listing Rule 5.3.5 – Payments to related parties of the Company and their associates during the quarter totalled \$0.152m. Related party payments represented salaries, superannuation and fees paid to directors and the CEO of the Company.

This announcement was approved for release by the Board of Orpheus Uranium Limited.

For further information, please contact:

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NON-EXECUTIVE DIRECTOR & COMPANY SECRETARY

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About Orpheus Uranium

Orpheus Uranium Limited is an Australian Securities Exchange listed exploration company exploring for uranium in South Australia and the Northern Territory, both jurisdictions which allow uranium mining and processing.

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.

Forward Looking Statements

The written presentation may contain forward-looking statement regarding the outlook for the Company's interpretation, work programs, and financial results. These forward-looking statements generally can be identified by phrases such as "anticipates", "potential", "plans", "intends", "believes", "likely", "appears", "expects", "likely", "appears" or other words or phrases of similar impact. There is inherent risk and uncertainty in any forward-looking statements. Variance will occur and some could be materially different from management's opinion. Developments that could impact the Company's expectations include a variety of known and unknown risks, uncertainties and other factors that could cause actual events or results to differ from those expressed or implied, including, without limitation, business integration risks; uncertainty of development plans and cost estimates, commodity price fluctuations; political or economic instability and regulatory changes; currency fluctuations, the state of the capital markets, Orpheus' ability to attract and retain qualified personnel and management, potential labour unrest, unpredictable risks and hazards related to the development and operation of exploration programs that are beyond the Company's control, the availability of capital to fund all of the Company's projects. These forward-looking statements are made as of the date of this presentation and the Company assumes no obligation to update these forward-looking statements, or to update the reasons why actual results differed from those projected in the forward-looking statements, except in accordance with applicable securities laws.

Tenement Schedule

Table 1: Summary of mining tenements

SOUTH AUSTRALIAN MINERAL EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
EL 6569	18/10/2020	17/10/2025	104	Sandstone	Coombedown Resources Pty Ltd	10% ¹
EL 5998	21/05/2017	20/05/2028	33	Campfire Bore	Coombedown Resources Pty Ltd	10% ¹
EL 6199	04/06/2018	3/06/2029	27	Myrtle Springs	Kelaray Pty Ltd	100%
EL 6407 ²	18/08/2024	17/08/2030	295	Lake Torrens	Kelaray Pty Ltd	100%
EL 5937	30/03/2017	29/03/2028	794	West Lake Torrens	Kelaray Pty Ltd	100%
EL 5945	20/04/2017	19/04/2028	221	Murdie	Kelaray Pty Ltd	100%
EL 6320	28/02/2019	27/02/2030	198	Andamooka Station	Kelaray Pty Ltd	100%
EL 6554	07/12/2020	6/12/2025	960	Frome Downs	Trachre Pty Ltd	100%
EL 6555	07/12/2020	6/12/2025	947	Curnamona	Trachre Pty Ltd	100%
EL 6703	3/02/2022	2/02/2028	987	Erudina	Trachre Pty Ltd	100%
EL 6900	19/01/2023	18/01/2029	143	Billeroo	Trachre Pty Ltd	100%
EL 6913	9/06/2023	8/06/2029	998	Mundowdna	Trachre Pty Ltd	100%
EL 6914	9/06/2023	8/06/2029	990	Muloorina	Trachre Pty Ltd	100%
EL 6915	9/06/2023	8/06/2029	978	Clayton	Trachre Pty Ltd	100%
EL 6958	18/12/2023	17/12/2029	294	Mundaerno	Trachre Pty Ltd	100%
EL 6960	18/12/2023	17/12/2029	797	Radium Hill South	Trachre Pty Ltd	100%
EL 6989	10/04/2024	9/04/2030	87	Woolshed	Trachre Pty Ltd	100%
QUEENSLAND MINING LEASE						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
ML 5631	16/05/1974	31/05/2026	0.32	Kroombit	Kelaray Pty Ltd	100%
QUEENSLAND MINERAL DEVELOPMENT LICENCE						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
MDL 2002	03/08/2016	31/08/2026	0.64	Kroombit	Kelaray Pty Ltd	100%
NORTHERN TERRITORY MINERAL EXPLORATION LICENCES						
Tenement	Granted	Expiry	Area (km ²)	Locality	Licensee	Interest
EL 31451	8/09/2017	7/09/2025	484.52	Mount Douglas	Trachre Pty Ltd	100%
EL 33075	3/01/2023	2/01/2029	103.63	Mount Douglas (Ban Ban)	Trachre Pty Ltd	100%
EL 33088	3/01/2023	2/01/2029	473.23	Woolner	Trachre Pty Ltd	100%
EL 33089	3/01/2023	2/01/2029	458.81	Marrakai	Trachre Pty Ltd	100%

NORTHERN TERRITORY MINERAL EXPLORATION LICENCE APPLICATIONS

Tenement	Applied	Expiry	Area (km ²)	Locality	Licensee	Interest
ELA 32445	25/06/2020	-	230.24	T-Bone	Trachre Pty Ltd	100%
ELA 32446	25/06/2020	-	63.71	Ranger NE	Trachre Pty Ltd	100%
ELA 32038	22/11/2018	-	127.49	Mount Douglas (Mary River)	Trachre Pty Ltd	100%
ELA 34013	07/10/2024		643.46	Conways	Trachre Pty Ltd	100%

There was one tenement with a change of interest in the January 2025 Quarter.

¹ Kelaray holds a 33% interest in Coombedown Resources Pty. Ltd.

² Memorandum of renewal received during the quarter.