



Minerals Research Institute of Western Australia

Annual Report 2023-24

Minerals Research Advancing WA

Statement of Compliance

For year ended 30 June 2024

HON. DAVID MICHAEL MLA

Minister for Mines and Petroleum; Ports; Road Safety; Minister Assisting the Minister for Transport

In accordance with section 63 of the *Financial Management Act 2006* (WA), we hereby submit for your information and presentation to Parliament, the Annual Report of the Minerals Research Institute of Western Australia (MRIWA or the Institute) for the reporting period ended 30 June 2024.

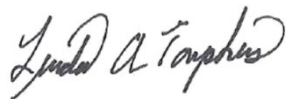
The Annual Report has been prepared in accordance with the provisions of the *Financial Management Act 2006* (WA) and any other relevant written law.

The financial statements comply with Australian Accounting Standards – Reduced Disclosure Requirements issued by the Australian Accounting Standards Board.



Miriam Stanborough
Chairperson of the Board

Date: 19 August 2024



Linda Tompkins
Deputy Chairperson of the Board

Date: 19 August 2024

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Overview

This section provides an overview of the Minerals Research Institute of Western Australia (MRIWA or the Institute), our vision and values and the broader MRIWA team who work to deliver on our strategic plan.

Highlights

COLLABORATIVE RESEARCH LEADERSHIP

Industry, academic and government relationships activate innovation and research networks attracting investment in high value activities



Support by the State Government in the 2023-24 Budget to establish a Critical Minerals Advanced Processing (CMAP) Common User Facility. The State's contribution of \$100 million is conditional upon the Commonwealth confirming its \$100 million matching contribution to the CMAP.



Public release of Green Steel Value Chain Model to support users to model scenarios and understand the impact of processing iron ore in WA. Further work includes finalising a pre-feasibility study for a low emission iron plant, beneficiation testing using brines for lower grade iron ores, and modelling studies on using a smelter to make green iron.

IMPACTFUL RESEARCH

Applied research creates capability and delivers economic and social benefit for Western Australia



Launching a Professional Development Bursary program supporting research and industry professionals in developing professional practice and career success spanning the boundaries of applied minerals research and innovation.



Implementing the Mining Equipment, Technology and Services (METS) innovation program to support the WA Government's Diversify WA economic framework¹

¹ <https://www.wa.gov.au/government/publications/about-diversify-wa>



Highlights (continued)

KNOWLEDGE TRANSFER

MRIWA is well-known and its minerals research outcomes are implemented



Delivery of MRIWA's inaugural Science Communication Awards, awarded at the ANZM Conference 2023, recognising value of high-quality, high-impact communication of minerals research, technology and services shaping the future of Western Australia.



Implementing a new PhD scholarship under the whole-of-government Mental Awareness, Respect and Safety (MARS) Program to improve research into the health, safety and wellbeing of workers and others in the mining industry.

GOVERNANCE

Robust governance and contemporary fit-for-purpose corporate practices



Recognised by Office of Auditor General as being in the top 20 best practice small entities for financial reporting and financial controls² for two consecutive years.



Releasing the MRIWA Intellectual Property Policy and Guidance Notes to assist recipients of Minerals Research Institute of Western Australia (MRIWA) support to improve their understanding and management of intellectual property (IP) assets.

² <https://audit.wa.gov.au/reports-and-publications/reports/financial-audit-results-state-government-2022-23/>



Message from the Chair

On behalf of the Board, I am delighted to present the MRIWA Annual Report for 2023-2024. The Institute has delivered a number of significant outcomes for the state during the year, consistent with our purpose of advancing Western Australia through minerals research.

One of MRIWA's pillars is Collaborative Research Leadership, and we are constantly challenging ourselves to find effective ways to connect people from industry, government and the research community, and to identify areas in real need of impactful research.

We hosted another successful conference in 2023, focussed on advancing net zero opportunities in mining, at which we also celebrated the inaugural MRIWA Science Communication Awards.

We also developed and launched IP guidelines to support the translation of research into practice, and were proud to lead discussions on a potential Critical Minerals Advanced Processing Facility, as announced in the state budget in May.

One of the highlights of the past year was the success of our inaugural METS-specific funding round, with eight applications received and four approved, representing \$1 million in MRIWA grants. Western Australia is respected for the quality of our innovative METS companies, and MRIWA is pleased to support the progress of companies in this sector who are actively commercialising research.

In addition to directly funding research and leading collaboration to identify and address emerging issues facing our industry, MRIWA has also proudly led an education program for many years.

During the year we awarded six new PhD scholarships, expanded our education program by launching new Professional Development Bursaries, and in partnership with DEMIRS administered the first round of Mental Awareness, Respect and Safety (MARS) PhD scholarships. In addition to directly investing in the pipeline of new research talent for our industry, our education program attracts academic excellence to the state.

As foreshadowed last year, there are plans to expand the scope of MRIWA's activities to include research into clean energy and emissions reduction. These are areas of natural adjacency to MRIWA's existing remit, and we are pleased that amendments to our Act to facilitate this change are in their final stages.

I am privileged to lead a board of accomplished professionals with experience across the minerals value chain. During the year we farewelled David Rose, who brought insightful technical expertise and broad industry knowledge to the board. We also welcomed Professor Hongqi Sun and Gerard Danckert to the board, who between them bolster the board's expertise in research management, clean energy, ESG, strategy and mining engineering.

MRIWA enjoys great support from our Minister, Hon David Michael, to whom I extend our sincere thanks. I would also like to acknowledge Hon Bill Johnston, who resigned from the Ministry in December, but who will be remembered as an enthusiastic champion of the Institute over many years.

Finally, I would like to extend my appreciation to the small but dedicated team at MRIWA, each of whom demonstrate great commitment to the Institute's work, most capably led by our CEO Nicole Roocke.

Miriam Stanborough
Chairperson of the MRIWA Board



Responsible Minister

Hon. Bill Johnston MLA, Minister for Mines and Petroleum; Energy; Hydrogen Industry; Industrial Relations to 8 December 2023.

Hon. David Robert Michael MLA Minister for Mines and Petroleum; Ports; Road Safety; Minister Assisting the Minister for Transport from 8 December 2023.

About Us

The Minerals Research Institute of Western Australia (MRIWA) is a statutory body established by the Western Australian Government in 2013 under the *Minerals Research Institute of Western Australia Act 2013 (WA)* (the MRIWA Act).

Our Work

MRIWA fosters and promotes minerals research for the benefit of the State by:

- Undertaking, procuring or managing minerals research projects;
- Fostering academic activities;
- Conferring and collaborating on matters relating to minerals research;
- Maintaining current knowledge of minerals research;
- Promoting awareness of and fostering public interest in matters relating to minerals research; and
- Providing advice to the Minister.

MRIWA may administer and co-invest in research projects undertaken within Western Australia, nationally and internationally. MRIWA collaborates with industry, research institutions and government partners to support research which will deliver tangible economic, environmental or social benefit for Western Australia.

As well as directly supporting minerals research projects, MRIWA funds are available for projects, programs and events that promote public awareness of, and interest in, minerals research.

Through our Education Program, MRIWA offers financial assistance in the form of scholarships to PhD and postgraduate candidates pursuing studies that align with MRIWA's objectives. Tailored professional and communication skills training is provided for postgraduate students accepted into the MRIWA program.

Vision and Values



Message from the CEO

Over the last financial year, the MRIWA team has continued to grow and support the delivery of minerals research with a focus on how the outcomes of this can benefit Western Australia.

Key highlights

Securing a funding commitment by the State Government in the 2023-24 Budget Papers (\$200 million over the forward estimates) to establish a Critical Minerals Advanced Processing (CMAP) Common User Facility. The State's contribution of \$100 million is conditional upon the Commonwealth confirming its \$100 million matching contribution to the CMAP.

Work completed this year includes:

- Provision of online green steel model value chain
- Review and implementation of updated policy and procedures relating to intellectual property
- Two PhD scholarships
- Nine research projects completed across a range of programs and focus areas.

Significant Issues and Trends

Current and Emerging Issues and Trends

MRIWA's research program is highly regarded and funded through a combination of state government appropriation, federal government research grants and sponsorship from third parties.

While the delays resulting from the impact of COVID appear resolved, further delays are now being experienced due to challenges in being able to efficiently onshore PhD students engaged to undertake the work.

Strategic changes in government policy, global economic conditions and decisions by other research grant bodies all

influence the success and efficiency of this model. Maintaining key sponsor relationships is crucial to ensuring the continuity and momentum of key research programs.

Global decarbonisation efforts and demand for critical minerals required to achieve this continue to create significant opportunity for Western Australia. Increased global focus on research and innovation to address these trends continues to create competition for research funding and talent. A similar environment exists for the establishment of a green iron sector.

Likely Developments & Forecast Results of Operations

Expansion of MRIWA's research scope to include clean energy and emissions reduction will provide new opportunities. Delays have occurred in the drafting of the legislative amendments however a focus remains on ensuring this expanded scope supports broader government policy for sectoral emissions reduction and to target priority activities of high value and high impact for the State.

Changes in personnel and resource constraints have limited progress in the focus areas of:

- Precision and low impact mining
- Alternative use of tailings and waste
- Supply chain risks.

With the implementation of the METS initiative, building awareness of the program and managing IP arrangements going forward requires continued maturation in the organisation's systems and processes.

With development in artificial intelligence, data management and accessibility is an increasing focus for the

organisation with investigation initiated during the year on this.

During the period, MRIWA participated in the Public Sector Commission's Women in Leadership Initiative and I want to commend the MRIWA team for their dedication to continuous improvement, strong governance and their pursuit of supporting research projects which support the creation of knowledge and technology.

Although the MRIWA Board has undergone several changes, their commitment to strong decision-making fosters ongoing improvement for the organisation. I want to extend my gratitude to them once again for their dedication to MRIWA and the valuable insights and perspectives they offer, which help us stay well-positioned for the future.

I acknowledge the contributions of Minister Johnston and Minister Michael who champion our organisation. The input of their staff is valued and appreciated.

Nicole Roocke
Chief Executive Officer and Chief Financial Officer



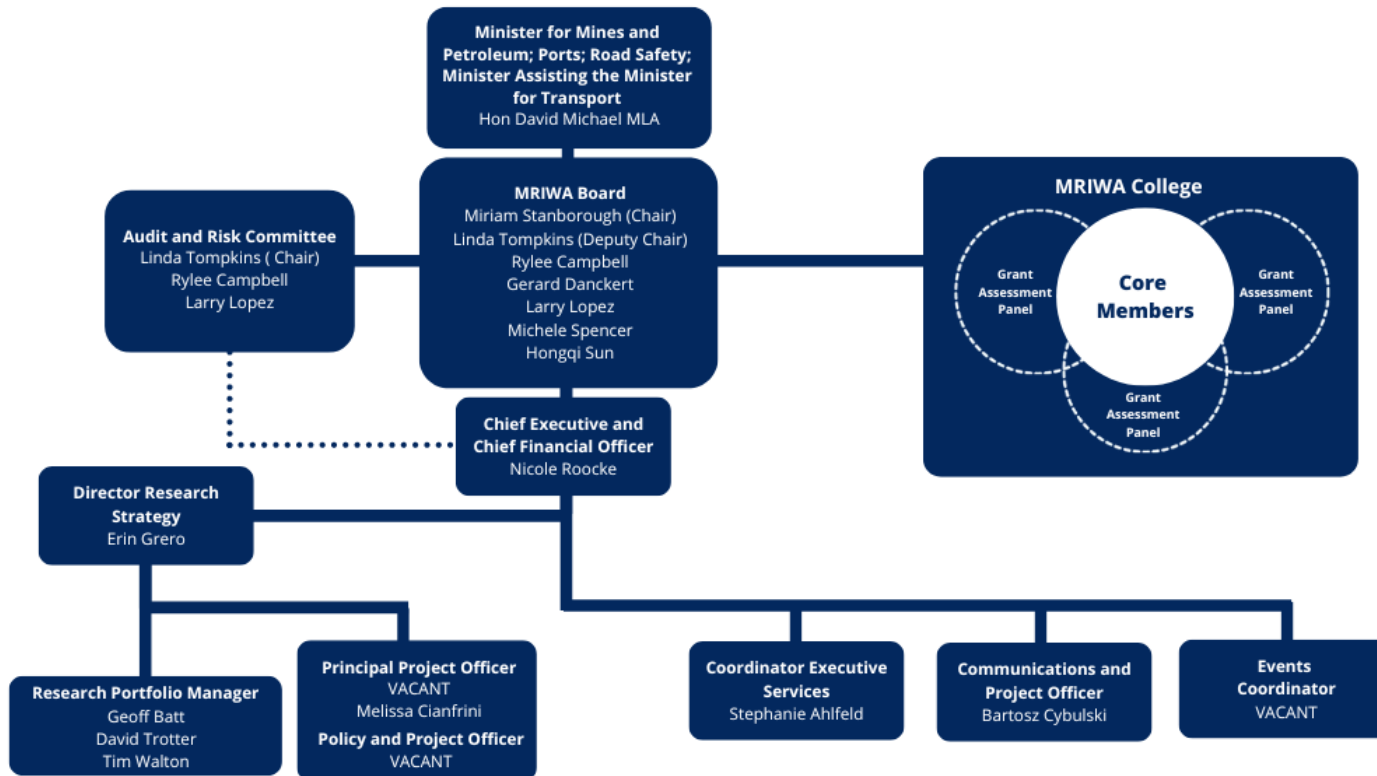
Our Structure

The Organisation Chart is published on the MRIWA website <https://www.mriwa.wa.gov.au/about-us/our-people/>



ORGANISATION CHART

June 2024



Our Team



Ms Nicole Roocke

Chief Executive Officer and Chief Financial Officer

Appointed Chief Executive Officer and Chief Financial Officer in November 2018, Nicole joined MRIWA after spending 15 years at the Chamber of Minerals and Energy of Western Australia coordinating industry input on a variety of government regulatory and policy issues and facilitating collaboration within the resources sector.

Nicole holds a Master of Science in Industrial and Organisational Psychology from the University of Western Australia (UWA) and a Master of Risk Management from the University of New South Wales (UNSW). She is a graduate of the Australian Institute of Company Directors.

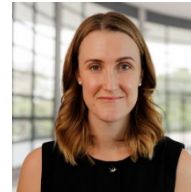


Ms Stephanie Ahlfeld

Coordinator Executive Services

Stephanie's career in the public service started in a Regional Local Authority and included roles in administration, finance, and human resources. She commenced with the Institute at the end of 2015 with a focus on service delivery, compliance, and continuous process improvement.

Stephanie holds a Bachelor of Commerce (Accounting) from Curtin University.



Ms Erin Grero

Director Research Strategy

Erin has been part of the MRIWA team since May 2021. Appointed as Director Research Strategy in July 2023, Erin leads the research team and activation of strategic initiatives including working towards expansion of MRIWA's research scope to include clean energy and emissions reduction research.

With a passion for sustainability, Erin has worked for the State Government for the past 8 years bringing experience in strategic policy and program development, stakeholder engagement, project and contract management. Erin came to MRIWA having been involved in the development of State Government renewable energy priorities including the Clean Energy Future Fund and the WA Renewable Hydrogen Strategy.

Originally from the United Kingdom, she holds an MSc in International Development and a Bachelors degree in Law from the University of Bristol.



Dr Geoffrey Batt

Research Portfolio Manager

Geoff has been a Research Portfolio Manager for MRIWA since 2019, leading the MRIWA Education Program and the Institute's focus areas in Exploration Amplification and Alternative Use of Tailings and Waste.

An experienced scientist and communicator focused on the accessibility and transferability of research and innovation, Geoff came to MRIWA from a private-sector consulting role and has spent 20 years as a respected researcher and educator at leading institutions around the globe.

Geoff holds a PhD in Earth Science from the Australian National University (ANU), and an MBA from UWA.





Mr Tim Walton

Research Portfolio Manager

Tim is a Research Portfolio Manager leading the Mining Equipment, Technology, Services (METS) and Precision and Low Impact Mining (PLIM) initiatives and MRIWA's IP area.

Previously he has worked in a diverse range of areas including university research strategy and partnerships, defence, conservation education, natural resources management, minerals policy and regulation, heavy industry and port logistics.

He holds a Bachelor of Arts in English from Edith Cowan University, an MBA from Curtin University and is a Fellow of the Australian Institute of Company Directors.



Mr David Trotter

Research Portfolio Manager

David is a metallurgist who has over 35 years of experience in the iron ore and steel industry in a variety of technology, logistical, and technical roles.

Before joining MRIWA, David was providing advice on green steelmaking technologies including the use of hydrogen in steelmaking, transport, and handling of HBI and DRI. His previous roles include Regional Manager Iron Ore for Rio Tinto Commercial Singapore and Head of Global Sales and Trading, Anglo American Singapore.



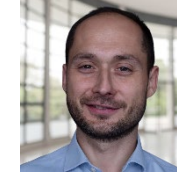
Dr Melissa Cianfrini

Principal Project Officer

Melissa joined MRIWA in 2024 as a Principal Project Officer, supporting the delivery of the MRIWA Education Program and Precision and Low Impact Mining (PLIM) focus area.

She has extensive experience in research, program development and evaluation, and project management for not-for-profit organisations, universities and the private sector, both in Australia and overseas. Experienced in providing strategic advice to senior executives in large and complex organisations, Melissa takes a holistic approach to her work and further utilises her skills in futures thinking to identify optimal solutions for stakeholders and projects.

Melissa holds a PhD in Community Psychology from Curtin University and a Bachelor of Behavioural Science (Honours) from the University of Notre Dame Australia.



Mr Bartosz Cybulski

Communications and Projects Officer

Bartosz joined MRIWA in 2024 as a Communications and Projects Officer. Bringing a wealth of experience from both private and state government enterprise in a variety of digital communication tools, aiding organisations to effectively convey messages across various digital channels, including experience in planning, executing, and monitoring digital communication strategies, ensuring they meet objectives and deadlines.

He is passionate about the future of digital communication and how the trends and advancements are likely to shape organisational culture and strategy.

Bartosz holds a Bachelor of Multimedia with a minor in business from Murdoch University.



Our Board Members



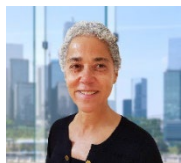
Ms Miriam Stanborough became Chair of MRIWA in January 2020.

Miriam is a chemical engineer with more than 25 years' experience in the minerals processing industry, across commodities including copper, uranium, gold, silver, alumina, lithium, salt, vanadium and mineral sands.

Miriam has held roles in technical development, production management, project management, business improvement, HR and diversity strategy, and sales and marketing.

She holds additional degrees in Arts and Mineral Economics, is a member of the Australasian Institute of Mining and Metallurgy (AusIMM) and is a graduate of the Australian Institute of Company Directors.

Miriam's other current board roles include Non-Executive Director of Pilbara Minerals, BCI Minerals and Australian Vanadium, and Deputy Chair of ChemCentre. With her husband, she runs a beef cattle operation in the south-west of Western Australia.



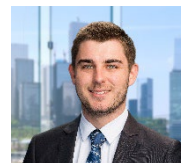
Dr Linda Tompkins became Deputy Chair of MRIWA and Chair of the Audit and Risk Committee in February 2023.

Linda has over 35 years of global experience in the resource sector through professional roles as a research and exploration geologist, technical director of an ASX- and AIM- (London) listed exploration company, corporate and resource lawyer, and group general counsel and company secretary of an ASX-listed company with overseas mining interests.

She has on-site experience in Australia, Brazil, China, and Africa in exploration, development, and mining operations for diamonds, lead-zinc, nickel and gold.

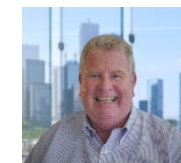
Linda has a PhD (Geology) and LLB (Hons) from The University of Western Australia (UWA) and is a member of the Energy & Resources Law Association (formerly AMPLA).

Her past board roles include director of the AMPLA national board, member of the advisory board of the UWA Geoscience Foundation, and other roles in the resources sector.



Mr Rylee Campbell is a Chartered Accountant and Wardandi Noongar man. He began his career within the External Audit division of a Big 4 accounting firm in Perth, auditing the financial statements of clients within the resources sector. Rylee's clients included ASX listed companies with operations in exploration, development, production, and rehabilitation, across multiple commodities.

He is passionate about volunteering in the Indigenous community and has spent time in the West Kimberley region of Western Australia consulting with an Indigenous owned NFP organisation on providing affordable beef to remote Aboriginal communities.



Mr Larry Lopez is a Partner at Perth-based Australian Venture Consultants focussed on providing consulting and advisory services to the mining industry, venture capital investors and governments. He is also a General Partner in AC Ventures, a national venture capital fund focussed on investing in start-ups.

Larry has over 40 years of experience financing innovative projects and companies. He has held numerous executive roles in government, and private and public companies that enable the commercialisation of research outputs and intellectual property.

Larry is a director of Fulbright Australia and a non-executive director of several private companies. He also sits on a number of not-for-profit boards including the Centre for Entrepreneurial Research and Innovation. He has been a director or partner in four venture capital funds, including funds investing in technology that enables the mining sector.

Larry obtained a BSc from Menlo College, School of Business Administration and is a graduate of the Pacific Coast Banking School at the University of Washington.





Dr. Hongqi Sun is a Professor of Chemistry at The University of Western Australia and was the Professor of Chemical Engineering (2017-2023) at Edith Cowan University, and a Research Fellow/Senior Research Fellow (2009-2016) at Curtin University. He became a Board Member at MRIWA in August 2023.

He has been listed as a Highly Cited Researcher by Web of Science since 2019. He was named Mid-Career Scientist of the Year in 2023 WA Premier's Science Award. Hongqi is also a member of Australian Research Council College of Experts, and a delegate to Australia-USA Hydrogen Research Partnerships. He is the Editor-in-Chief of Cleaner Chemical Engineering (Elsevier).



Ms Michele Spencer is the Executive Director of the Geological Survey and Resource Strategy Division at the Department of Mines, Industry Regulation and Safety where she leads a talented team of geoscientists and support staff to acquire data and conduct research to benefit the community and resources sector and inform government policy and legislative reform.

As a mining professional, Michele has worked in Australia and internationally accruing more than 20 years multi commodity experience including in gold, nickel, copper, cobalt and iron ore – magnetite. Michele has experience across exploration, open pit and underground mining, business development, and strategic planning as well as executive-level government experience within a regulatory environment.

She holds a BSc with Honours and a graduate certificate in International Relations and National Security and is a member of the Australasian Institute of Mining and Metallurgy (AusIMM). Michele has a keen interest in foreign policy and international investment.



Mr Gerard Danckert is a mining executive with over 35 years of experience in senior strategic, technical and operations leadership roles in the iron ore, alumina, and gold industries. He is a mining engineer with an MBA from the University of Western Australia and recently completed Leading Sustainable Corporations, Saïd Business School, University of Oxford.

Gerard is passionate about helping to solve the resource industry's major challenges – sustainable development, climate response and technical evaluation. As Head of Rio Tinto Energy and Climate Change, Gerard established the Energy and Climate Centre of Excellence and led the first co-ordinated group decarbonisation plans.

Gerard has served MRIWA in an advisory capacity since 2017, most recently as Chair of the Grant Assessment Panel. He is an active mentor for Industry Mentoring Network in STEM (IMNIS), a member of the Curtin University Science and Engineering Faculty Advisory Council and a Fellow of the Australasian Institute of Mining and Metallurgy.



MRIWA Board

MRIWA Board members are appointed by the Minister for Mines and Petroleum, in accordance with Section 27(1) of the MRIWA Act and are remunerated by an annual fee set by the Public Sector Commissioner.

An increase in remuneration was approved by the Minister based on recommendations from the Public Sector Commissioner, effective from 18 September 2023.

Membership as of 30 June 2024	Initial Appointment	Term Expiry	No. of Meetings Eligible to Attend	Base Sitting Fees (\$ pa) ^(a)	Foregone Sitting Fees (\$ pa) ^(b)	Actual Sitting Fees Paid (\$ pa) ^(c)
Miriam Stanborough (Chair)	1 Oct 2017	31 Dec 2025	4 of 4	26,147	5,801	22,560
Linda Tompkins (Deputy Chair and Chair, Audit and Risk Committee) ^(d)	1 Mar 2020	28 Feb 2026	4 of 4	16,996	0	18,060
Rylee Campbell ^(d)	1 Feb 2023	31 Jan 2026	4 of 4	14,381	1,374	13,728
Larry Lopez ^(d)	1 Jan 2016	31 Dec 2024	2 of 4	14,381	13,742	0
David Rose	1 Jun 2018	14 Dec 2023	2 of 2	7,190 ^(e)	5,809	0
Michele Spencer	1 Feb 2023	31 Jan 2026	4 of 4	0 ^(f)	NA	NA
Hongqi Sun	1 Aug 2023	31 July 2026	4 of 4	14,381	12,792	0
Gerard Danckert	1 Jan 2024	31 Dec 2026	2 of 2	7,190 ^(e)	0	7,981

(a) Eligible sitting fees, effective from 18 September 2023, exclusive of superannuation

(b) Foregoes sitting fees for use in the MRIWA Directors' Scholarship or other Education Program initiatives as determined by contributing Board Members.

(c) Actual sitting fees paid, inclusive of superannuation.

(d) Audit and Risk Committee Member - the Committee assists the MRIWA Board by providing an objective review of the effectiveness of the financial management and reporting, risk management, audit and compliance framework. The Chief Financial Officer and Deloitte attend ex-officio.

(e) Pro-rata base sitting fee based on period on Board during Financial Year.

(f) Ineligible for remuneration in accordance with Premier's Circular 2023/02 State Government Boards and Committees.



Legislation

Enabling and Administered Legislation

MRIWA was established as an agency in February 2014, under the *Minerals Research Institute of Western Australia Act 2013* (WA).

The Institute administers the *Minerals Research Institute of Western Australia Act 2013* (WA).

Other Key Legislation Impacting on our Activities

In the performance of its functions, the Institute complies with other relevant written laws including the following Western Australian legislation:

- *Auditor General Act 2006*
- *Disability Services Act 1993*
- *Electoral Act 1907*
- *Equal Opportunity Act 1984*
- *Financial Management Act 2006*
- *Freedom of Information Act 1992*
- *Government Employees Superannuation Act 1987*
- *Industrial Relations Act 1979*
- *Interpretation Act 1984*
- *Minimum Conditions of Employment Act 1993*
- *Procurement Act 2020*
- *Public Interest Disclosure Act 2003*
- *Public Sector Management Act 1994*
- *Salaries and Allowances Act 1975*
- *State Records Act 2000*
- *Work Health and Safety Act 2020*
- *Workers' Compensation and Injury Management Act 1981*



Report on Operations

Actual Results versus Budget Targets

	2024 Target \$	2024 Actual \$	Variation \$
Total cost of services	15,373,718	6,808,960	(8,564,758)
Net cost of services	13,572,516	4,886,063	(8,686,453)
Total equity	8,347,703	17,169,935	8,822,232
Net increase / (decrease) in cash held	(6,397,486)	3,650,041	10,047,527
Approved salary expense level	1,675,000	1,486,000	(189,000)

For detailed information on MRIWA's financial performance, refer to the *Financial Statement and Notes* section of this report.

Summary of Key Performance Indicators

Key Effectiveness Indicator	2023-24 Target	2023-24 Actual
Ratio of total cash value of research projects to total MRIWA cash investments in those research projects	4	5.53

Key Efficiency Indicator	2023-24 Target	2023-24 Actual
Total administration cost for the year as a percentage of the total cash value of research projects and scholarships under management during the year.	2.5%	2.51%

MRIWA's Outcome Based Management Framework did not change during 2024.

For detailed information on MRIWA's Key Performance Indicators refer to the *Our Performance* section of this report.

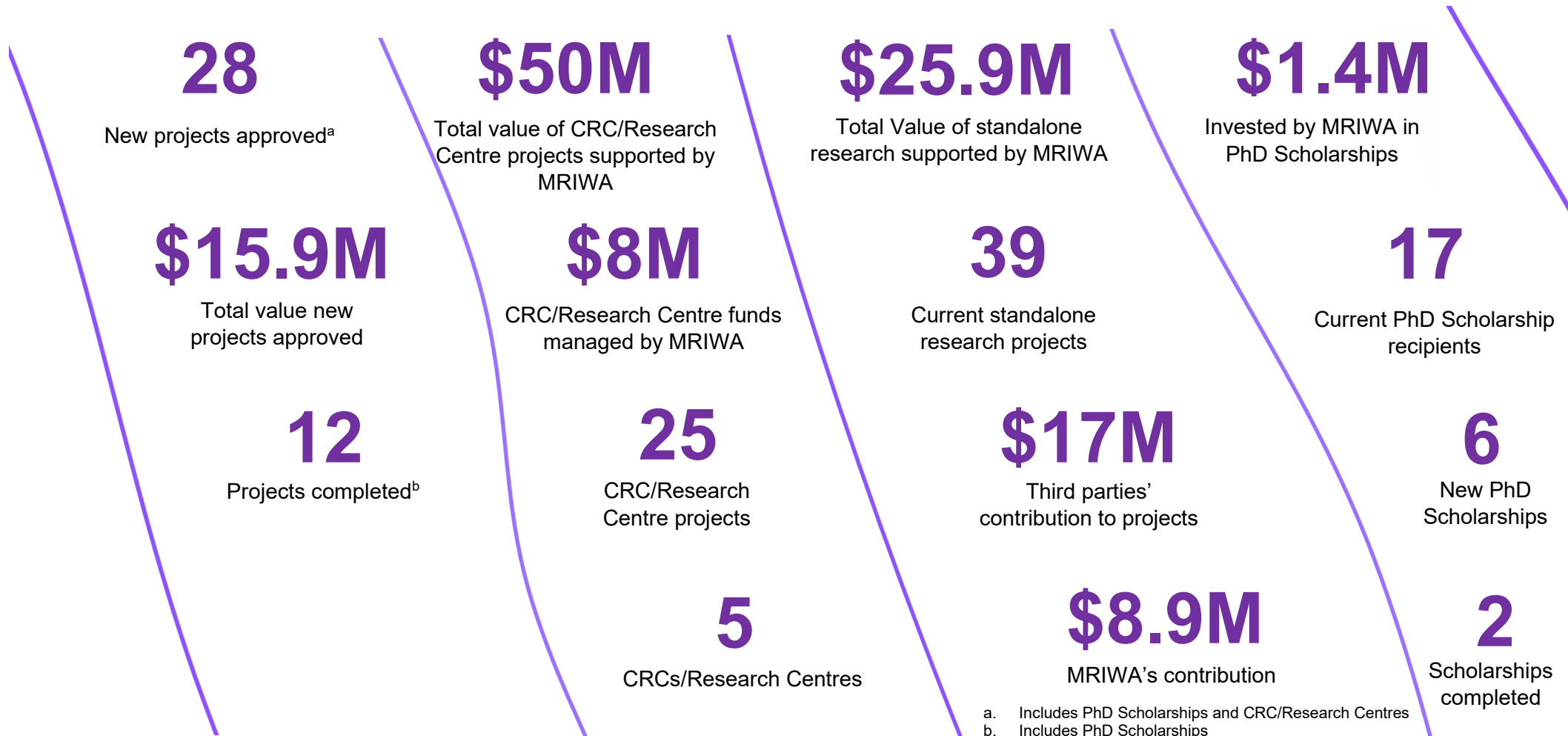


Our Projects

This section outlines MRIWA's applied research projects, how they create capability and deliver economic, environmental, and social benefit for Western Australia.

Through the MRIWA research portfolio, industry, academic and government relationships are activated enabling innovation and research networks to attract investment in high-value research activities.

Highlights for 2023 – 2024



Our Focus Areas

MRIWA Focus Areas are campaigns targeting specific areas which seek to stimulate and amplify activities of high value to the State.

Focus Areas may fall in areas specific to parts of the mining value chain or have impact across the entire value chain, with the benefit to be realised in Western Australia.

MRIWA will use these Focus Areas to enable industry, academic and government relationships to activate innovation and research networks and attract investment in high value activities. Calls to action, objectives and anticipated outcomes will vary for each Focus Area.

Areas for focus are selected by the MRIWA Board and informed by government priorities and the Research Priority Plan, with input from the MRIWA College and MRIWA networks.

The following are MRIWA's focus areas:

- Net Zero Emission Mining
- Green Steel
- Critical Minerals
- Exploration Amplification
- Precision and Low Impact Mining
- Alternative Use of Tailings and Waste
- Mineral Carbonation
- Mining Equipment and Technology Services (METS)
- Supply Chain Risk (work on this is not yet commenced)

View the full list of projects for each focus area and find out more information on our website.¹

¹ <https://www.mriwa.wa.gov.au/minerals-research-advancing-western-australia/focus-areas/>

Net Zero Emission Mining

The Challenge

This strategic focus area aims to reduce the carbon footprint, lower overall energy costs and improve the energy efficiency of the Western Australian mining sector through harnessing collective efforts, enabling decarbonisation to become an opportunity for the sector, not a cost.

The Context

With a global shift towards decarbonisation, the need for mineral resources to support the energy transition places Western Australia at the forefront of a significant economic opportunity.

Western Australia supplies the minerals used for wind and solar energy generation, electric vehicles, and battery storage which are critical for the international community's efforts to achieve the Paris Agreement goals of net zero emissions by 2050.

With this opportunity also comes a challenge, in ensuring new and increased demand for these resources meets rising environmental, social and governance (ESG) expectations and does not negatively impact on the competitiveness of the mining sector.

Innovation is needed for our mining sector to capture this opportunity, develop new ways of working and transform how energy is generated and used. The lead time to new technology development and deployment means preparations need to start now.



Green Steel

The Challenge

Green Steel – the question is not ‘is it possible’, but rather ‘how to make it possible’.

This MRIWA Focus Area aims to promote further research as identified in the green steel study² to enable Western Australia to understand and identify magnetite and hematite iron ore resources best suited to supporting the global green steel ambitions, creating new markets and industries for the state.

The Context

Western Australia accounts for 38% of the global supply of iron ore and is the leading Australian state in iron ore production – 934 million tonnes (mt) in 2022 – according to the Australian Government’s Office of the Chief Economist. Brazil, our major competitor, accounted for only 17% of the global supply³.

The iron ore industry is the State’s largest and most important industry, providing direct and indirect economic and social contributions which are greater than any other industry to the State. Its contribution is also significant to the national economy.

It is for this reason opportunities to develop further testing of the iron ore and energy requirements in the identified pathways to green iron in Western Australia are required. A capability to produce green iron will attract further investment in sustainable processing of iron ores to produce green steel.

With the steel industry generating more than 7% of global carbon emissions, there is a significant focus on the development of green steel technology.

Western Australian iron ore will have a key role to support the steel industry decarbonise.

² <https://www.mriwa.wa.gov.au/minerals-research-advancing-western-australia/focus-areas/green-steel/green-steel-resources/>

Critical Minerals

The Challenge

The critical minerals challenge is to meet the demand for processed metals driven by changing technical requirements and metal types for a low emissions economy.

The Context

The industry recognises critical minerals present a once in a generation opportunity to re-strategise global supply chains. There is a collective demand from countries around the world to democratise the production, transmission, and consumption of energy, which is altering international balances and requirements of minerals.

A new national critical minerals strategy was released by the Federal Critical Minerals Office in June 2023⁴. MRIWA will be working to help align Western Australian research programs led by the State’s universities, industry, and the Western Australian government.

³ WA Department of Jobs, Tourism, Science and Innovation: Western Australia Iron Ore Profile – February 2022 as reported in <https://www.mriwa.wa.gov.au/minerals-research-advancing-western-australia/focus-areas/green-steel/green-steel-resources/>

⁴ <https://www.industry.gov.au/publications/critical-minerals-strategy-2023-2030>



Exploration Amplification

The Challenge

Mineral exploration and discovery represent the foundations of Western Australia's successful mining sector. The continued productivity of this key industry will require discovery and characterisation of ore bodies deeper below the surface and hidden from traditional methods of discovery, pushing industry to reduce both the cost and the environmental footprint of exploration technology.

The Context

Investment in exploration innovation is critical for Western Australia to meet the emerging challenges of mineral discovery and maintain the State's position as a preferred supplier of mineral commodities.

Through our Exploration Amplification Focus Area, MRIWA works to define a future vision of productive mineral exploration for Western Australia and to support the areas of priority research and education needed to deliver on this vision.

In striving toward this goal, MRIWA encourages collaboration between the minerals industry, researchers and government to:

- Create and nurture global networks and knowledge leadership in mineral exploration.
- Increase adoption and implementation of exploration research outcomes.
- Maintain strategic foresight regarding research and education needs related to mineral exploration.
- Stimulate partnership opportunities in areas of exploration research initiated by industry.
- Generate awareness of and enthusiasm for career pathways in exploration, and in broader geoscience and technology as they relate to mineral exploration.

Precision and Low Impact Mining

The Challenge

The Western Australian mining industry has seen an increasing focus on precision and low impact mining approaches, driven by both industry and government initiatives, such as the adoption of autonomous haulage systems, and the implementation of advanced environmental monitoring technologies. Despite these advancements, there are still challenges to overcome, including the rehabilitation of legacy mine sites, the management of water resources, and the engagement of Traditional Owner communities in decision-making and project milestone processes.

The Context

The minerals sector is undergoing a significant global shift towards responsible practices as a result of growing community environmental and social concerns, changing regulations, and increasing pressure from stakeholders. Initiatives such as the International Council on Mining and Metals (ICMM) and the United Nations Sustainable Development Goals (SDGs) provide platforms for dialogue and cooperation on sustainable mining issues. Emerging trends in precision and low impact mining include collaboration and knowledge exchange among mining nations to share best practices, and development of innovative technologies to address common challenges.

While Western Australia is a major contributor to Australia's mining industry, and plays a crucial role in its economy, generating employment, export revenue, and economic growth, there remains opportunities for the state to position itself as a global leader in responsible mining regulation, practices and innovation.

MRIWA encourages and supports precision and low impact mining research which advances technologies, provides clean energy solutions and responsible practices to optimise resource extraction and management, minimise environmental disruption and uphold social values.



Alternative Use of Tailings and Waste

The Challenge

Byproducts generated in the extraction and processing of minerals represent one of the largest bulk waste streams globally, and the safe storage and handling of this material imposes a large and increasing cost on the mining industry. Continued growth of the WA mining sector requires industry practice to be redefined to reduce both the volume of waste created by mining, and the impact of waste materials on the environment and communities where mining takes place.

The Context

The volume of waste rock and tailings produced by the WA mining sector is expected to double by 2035, as the transition to renewable energy drives increased demand for critical minerals and other key resources.

The handling and storage of these waste materials impose significant and growing direct costs on the mining industry and lock up further potential resource value – with existing tailings facilities known to contain a range of metal content – including critical raw materials – that could represent a valuable secondary resource with appropriate reprocessing technology⁵.

Finding ways to reduce the volume of waste created by mining and extract this value from waste streams could help on both sides of the ledger – reducing the environmental impact of mining and mineral processing, and creating additional business value and social opportunities for Western Australia.

Extraction of valuable components from mining residue could also enable further upcycling of bulk mine waste into high-value products amenable for use in the construction and ceramic industries, or downcycling for backfilling, road construction and to support carbon capture through mineral carbonation.

⁵ Kinnunen et al., 2022 - <https://doi.org/10.1016/j.clet.2022.100499>

Mineral Carbonation

The Challenge

Increasing the rate of direct air capture and the rate of reaction via mineral carbonation to enable cost effective rapid, large-scale carbon dioxide (CO₂) sequestration.

The widespread, industrial-scale utilisation of mineral carbonation has enormous potential to sequester CO₂ emissions but is inhibited by technological and economic challenges.

The Context

The goal of the 2015 Paris Agreement is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal will require not only global peaking of greenhouse gas emissions as soon as possible but will also require the removal of CO₂ from the atmosphere.

Mineral carbonation, one form of carbon capture, use and storage (CCUS), has the potential to be a versatile approach to both remove and permanently store carbon dioxide at the gigatonne scale while also providing strategic economic advantage to quickly transition Western Australia to a low carbon economy supporting global low carbon supply chains.

The best types of materials for mineral carbonation are those rich in the metals calcium, magnesium and iron. Mafic and ultramafic rocks found within Western Australia's prolific greenstone belts are particularly rich in magnesium and calcium-rich minerals, hence are particularly prospective for mineral carbonation.

Mineral carbonation combined with direct air capture provides added opportunity for Western Australia.



Mining Equipment and Technology Services

The Challenge

Research is only impactful if effectively translated into innovations that can diffuse into the marketplace and be adopted by users. Internal analysis undertaken by MRIWA has shown limited direct evidence of uptake of MRIWA-funded research outputs by industry sponsor companies.

With Knowledge Transfer a key pillar in the MRIWA strategic plan, ongoing consideration is given to how minerals research outcomes can be promoted for adoption and implementation.

The Context

MRIWA recognises the role the Mining Equipment, Technology and Services (METS) sector plays in the mining innovation lifecycle by translating new knowledge created through research into solutions which can benefit Western Australia.

The MRIWA METS Innovation Program is intended to assist Western Australian based METS companies develop products and services which address issues in one or more of the Focus Areas.

The METS Innovation Program consists of a grant scheme and project facilitation to assist in connecting with potential collaborators and sponsors, as well as navigating the innovation ecosystem and other available forms of support.



Our Research

The Minerals Research Institute of Western Australia (MRIWA) is focused on the research and development needs of the Western Australian minerals industry to ensure it remains an engine of responsible economic growth and social benefit for Western Australia.

The MRIWA Research Priority Plan⁶ identifies the areas where MRIWA may make investment into high-impact research and development. Priorities included in the Plan reflect those issues which industry, the research sector and the MRIWA Board agree present real and significant challenges inhibiting Western Australians from fully benefiting from the minerals sector; and where resolution of these challenges will create opportunities and deliver value.

The revised Research Priority Plan was released in February 2020 and describes the medium to long term knowledge and technology needs of the State's minerals industry.

Those seeking to work with MRIWA on our **Impactful Research** program need to demonstrate alignment with the priorities outlined in the Plan, and establish how their proposals would deliver economic, social or environmental benefit for Western Australia.

The priorities fall across six broad areas of research (Program areas). The Program areas incorporate priorities specific to parts of the mining value chain, and broader themes applicable across the value chain, with an integrated approach required to achieve the intended outcomes outlined in the Plan.

⁶ See page Pr - 9 for MRIWA's Research Priority Plan Program Summary.

MRIWA Project Portfolio

The MRIWA [website](#) features current and completed MRIWA-funded research projects, the challenges they are seeking to address and the intended benefits the projects will deliver to Western Australia.

The screenshot displays the MRIWA website's Project Portfolio page. At the top, there is a navigation menu with options like 'About Us', 'Research Funding', 'Research Projects', 'Challenges', 'News & Events', and 'Contact Us'. Below the navigation, the page title 'Project Portfolio' is followed by the text 'MRIWA and its predecessors have supported over 400 projects'. A search bar is visible, and below it, there are filters for 'Program Area' and 'Filter by tag'. The main content area shows a list of projects, with one project highlighted: 'Understanding the Mt Weld Carbonatite mineral system – a Critical Minerals super-resource in Western Australia'. This project overview includes a 'Project Overview' table with the following data:

Project Overview		
Project Number M1602	Program Area Critical Minerals Resources	Project Theme Mineral Systems
Total Grant Value \$55,985	MRIWA Contribution \$16,176	Project Period 2022 - 2024

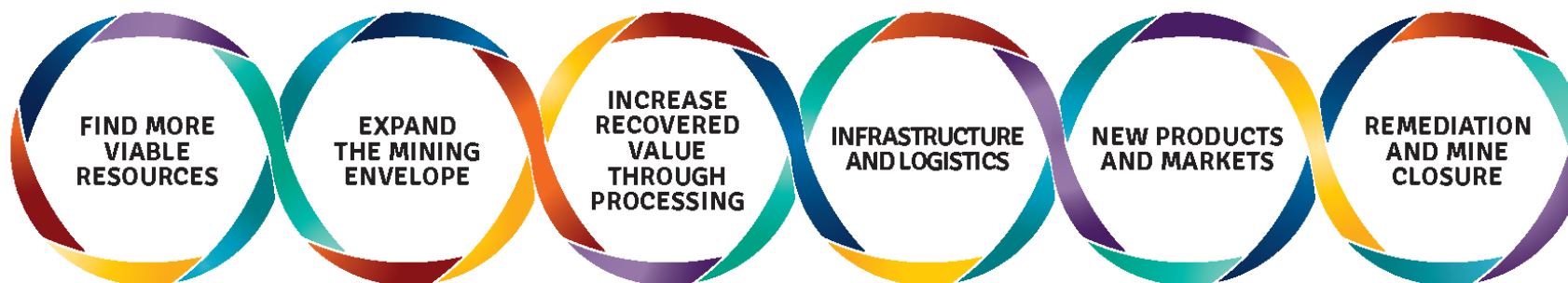
Below the table, there are sections for 'The Challenge', 'Proposed Solution', 'Research Contact', and 'Lead Organisation'. The 'Research Contact' is listed as 'Fiona Kinn - f.kinn@mriwa.com.au' and 'Julia Collins - j.collins@mriwa.com.au'. The 'Lead Organisation' is 'Menzies University Ltd'. The 'Sponsors' section lists 'Mt Weld Mining Pty Ltd'.



Research Priority Plan Summary



Research Portfolio Summary 2023-2024



No. Projects	19	5	13	3	19	5
MRIWA Contribution⁷	\$5.6M	\$598K	\$3.2M	\$800K	\$4.8M	\$414K
Third-Party Contribution	\$16.3M	\$1.2M	\$9.2M	\$2.5M	\$26.2M	\$5M
Total Grant Value	\$21.9M	\$1.8M	\$12.4M	\$3.3M	\$31M	\$5.4M

*Note: Due to rounding, some totals may not correspond with the sum of the separate figures
Does not include scholarships*

⁷ Includes the contribution from Department of Jobs Tourism Science and Innovation for the FBI CRC (\$500,000) and HILT CRC (\$1 million)



CRC/Research Centre Participation



The Cooperative Research Centre for Transformations in Mining Economies (CRC TiME) brings together mining companies, regulators and community participants to deliver coordinated investment into research addressing the challenges underpinning mine closure and relinquishment.

CRC TiME's research mission is structured around four program areas targeting those aspects of the transition from mining to post-mine scenarios to which Australia's economic, environmental and social resilience is most vulnerable.

Over its lifetime, this research centre is intended to deliver practical outcomes empowering and supporting transformational and world-leading change in the Australian mine closure sector.

In 2023-24, seven CRC TiME projects were supported by allocation of MRIWA funds. One of these projects was also completed in 2023-24.



ARC Industrial Transformation Training Centre (ITTC) in Transforming Maintenance through Data Science.

This ITTC was established to support the development and implementation of techniques to deliver transformational value in mining industry maintenance through application of innovative Data Science technology, and to support the training of a data-science-savvy future workforce.

MRIWA is supporting the development and research training of two PhD students working within the ITTC.

The centre is winding down as its student cohort completes its activities over 2024 with final reporting due later in 2024.

	Commenced operation:	2020
	Funding duration:	10 years
	Participants:	74 participants including leading mining and METS companies, regional development organisations, government and research partners
	Total Project Value:	\$130M comprised of \$29.5M cash from the CRC Program \$30.5M cash from industry and research participants \$70M in-kind support
	MRIWA contribution: (M0558)	\$300,000 over 10 years Additional \$480,000 in project funding

	Commenced operation:	2019
	Funding duration:	5 years
	Participants:	Partners from mining companies and research organisations
	Total Project Value:	\$9.10M comprised of \$3.95M cash from the ARC ITTC program \$3.05M industry cash contributions \$1.88M university cash contributions
	MRIWA contribution: (M0508)	\$240,000 over 5 years










MinEx CRC is delivering coordinated investment in research to develop more productive, safer and more environmentally friendly drilling technologies and workflows to

improve the success rate and efficiency of discovering and defining mineral deposits.

Key deliveries from the MinEx CRC will include development of a new style of mineral exploration drilling rig incorporating revolutionary coiled tubing drilling technology, and a suite of new and innovative technologies for collecting data while drilling.

MinEx CRC is intended to operate for three contract phases. Phase 1 of the MinEx research program was completed at the end of December 2021, with phase 2 commencing in January 2022 and due to run until the end of December 2024.

Three phase 2 projects were supported by allocation of MRIWA funds in 2023-24.

	Commenced operation:	2018
	Funding duration:	10 years
	Participants:	Over 40 partners from mining and METS companies, government, and research organisations
	Total Project Value:	\$219M comprised of \$50M cash from the CRC Program \$42M cash industry and research participants \$52M non-staff in-kind \$74M staff in-kind
	MRIWA contribution: (M0509)	\$1M over 10 years Additional \$560,000 in direct project funding



HILT CRC will enable our heavy industry sector to compete in the low-carbon global economy for carbon-neutral materials such as 'green' iron, alumina, cement and other processed minerals. The Australian Heavy Industries sector will benefit

substantially from a carefully considered mix of electrification and hydrogen-based fuels.

HILT CRC has continued with the delivery of the research strategy outlined in 2022. The 16 quickstart projects have been completed and have then resulted in 13 stage 2 projects being approved in 2023 and 2024. There are another 7 new projects under evaluation or awaiting execution in 2024.

MRIWA has approved 5 projects for in-kind and allocated funding support including Beneficiation of iron ores, Hydrometallurgical treatment of iron ores using brines stage 1 and stage 2, green steel market evaluation and China green steel outlook study.

	Commenced operation:	2021
	Funding duration:	10 years
	Participants:	Partners from mining and METS companies, government, and research organisations
	Total Project Value:	\$176M comprised of \$39M cash from Dept Industry, Science & Technology \$34M cash from the CRC Program \$43M cash industry and research participants \$29M non-staff in-kind \$31M staff in-kind
	MRIWA contribution: (M10425)	\$1M over 10 years ⁸ Additional \$500,000 in direct project funding

⁸ Funding provided in full by the Department of Jobs, Tourism, Science and Innovation and managed by MRIWA.










The Future Battery Industries Cooperative Research Centre (FBI CRC) is enabling the growth of battery industries to power Australia's future and ensure Australia plays a leading role in the global battery revolution.

The FBI CRC brings together organisations covering the full extent of the battery value chain, including mining, extraction, processing, and refining of battery minerals, metals and materials, as well as downstream uses such as precursor chemical manufacture, battery cell manufacture, battery recycling and battery deployment in defence, electrical utilities, mining, and other mobile and stationary applications.

At the end of 2023-24 MRIWA was actively involved in 9 FBI CRC projects with these projects all expected to be completed within the budget framework ending 2025.

	Commenced operation:	2019
	Funding duration:	6 years
	Participants:	73 participants from mining and METS companies, government, and research partners
	Total Project Value:	\$129.1M comprised of \$25M cash from the CRC Program \$38.6M cash from industry and research participants \$32M non-staff in-kind \$33.5M staff in-kind
	MRIWA contribution: (M0533)	\$6M over 6 years (including \$500,000 contributed by Department of Jobs, Tourism, Science and Innovation)



Future Battery Industries Cooperative Research Centre (FBI CRC)



Our Research

PROGRAM 1: Find More Viable Resources

Western Australia's known mineral deposits in the key domain close enough to the surface for their extraction to be economically viable are being developed faster than they are replenished by new discoveries.

To meet the challenge of finding significant new discoveries and building on the focus of UNCOVER Australia and the Western Australian Government's Exploration Incentive Scheme, research supported under Program 1 is intended to systematically advance knowledge and capability in mineral system understanding, exploration technology and prediction to improve mineral exploration productivity.

In doing so, this research will inform the pre-competitive geological, geochemical and geophysical knowledge base and create exploration capability to:

- position Western Australia as a global leader in exploration technology
- facilitate private sector investment in existing and newly-identified Western Australian mineral provinces to develop the State's rich natural resources

Themes

- Mineral Systems
- Detection Technology
- Data Driven Decisions
- Regulatory Tools and Processes
- Safety, Social and Environmental Sustainability
- Workforce of the Future

\$5.6M

MRIWA contribution

\$21.9M

Total value of research projects

6

Projects completed

3

CRC/Research Centre projects

16

Standalone research projects



Project Case Studies

Field-based XRF for prompt Au analysis

Program 1 – Find More Viable Resources

STATUS: Final Report Published⁹

Project No: M0543

THE CHALLENGE

Sample analysis for mining companies previously involved turn-around periods ranging from a few days to many weeks, due to a need to send samples away to laboratories for assay. This results in inefficient exploration practices and higher costs, especially when exploring in remote areas.

KEY FINDINGS

A revolutionary in-field assay method for gold, detectORE™, has been developed and is now commercially available for most exploration purposes. Field trials of this new 'reactive sampling™' technique demonstrated detectORE™ results from one day's sampling activities can direct the next day's sampling activity, with gold able to be measured in as little as 6 hours in concentrations as low as 10 parts per billion. The method is non-hazardous, robust, reliable, simple, compact, environmentally-benign, cost-effective and easily transported to sites around the world.

BENEFIT TO WA

Technology development achieved through this project and through the formation of a new WA-based METS company:

- Puts WA at the forefront of an exciting new gold technology
- Accelerates gold analysis and exploration in the field
- Reduces exploration costs through faster turnaround
- Improves exploration efficiencies increasing the potential for future gold discoveries
- Encourages more investment in gold exploration in WA particularly in remote areas

Sponsors

Barrick Gold Corporation
Bellevue Gold Mines Ltd
Centerra Madencilik A.Ş.
Fosterville Gold Mine Pty Ltd
Gold Fields St Ives Gold Mining Company Pty Ltd
Gold Road Resources Ltd
Newcrest Mining Limited
Perseus Mining
Portable PPB Pty Ltd

Lead Organisation

Portable PPB Pty Ltd

Research Contact

Simon Bolster

Total Grant Value

\$952,518

MRIWA Contribution

\$218,000



Pictured (L-R) MRIWA Chairperson Miriam Stanborough, Managing Director Portable PPB Pty Ltd Simon Bolster, the Hon. David Michael MLA, Minister for Mines and Petroleum; Ports; Road Safety; Minister Assisting the Minister for Transport at the Portable PPB Pty Ltd site 20 December 2023.

⁹ <https://www.mriwa.wa.gov.au/research-projects/project-portfolio/field-based-xrf-for-prompt-au-analysis/>



Current Projects/ Contracts Executed

Program 1 – Find More Viable Resources

Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0462a	Detection technology	(Was M556) The paradigm shift for minerals exploration using ultrafine soils and intelligent data integration tools - Extension to M462	Commonwealth Scientific Industrial Research Organisation (CSIRO) Dr Ryan Noble	Anax Metals Limited Condamine Resources De Grey Mining Department of Energy, Mines, Industry Regulation and Safety (GSWA) Dreadnought Resources Emmerson Resources Limited Fortescue Metals Group Ltd Geological Survey of New South Wales Geological Survey of Queensland Geological Survey of South Australia Greenmount Resources Pty Ltd Hexagon Energy Materials Limited IGO Limited Kairos Minerals Kalamazoo Resources Lodestar Minerals Limited MCA Nominees Mining Investments Australia Monger Gold Ltd New Age Exploration Limited Newmont Goldcorp Tanami Pty Ltd Northern Star Resources Limited Northern Territory Geological Survey Ozz Resources Limited Strategic Energy Resources Limited Tojo Minerals Western Gold Resources Limited	3	1,238,249	117,000



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0470a	Mineral systems	(WAS M555) A multi-scale approach to controls on mineralisation in the Fraser Zone, Western Australia	Curtin University Katy Evans	Curtin University Department of Energy, Mines, Industry Regulation and Safety - Geological Survey of Western Australia IGO Limited Legend Mining Limited MG Creasy	3.67	1,023,300	341,300
M0521	Mineral systems	Lithospheric and crustal-scale controls on multi-stage basin evolution: Impacts on Mineralising System	University of Western Australia (CET - Centre for Exploration Targeting) Weronika Gorczyk	Department of Energy, Mines, Industry Regulation and Safety (GSWA) First Quantum Minerals Exploration (Australia) Pty First Quantum Minerals Ltd Fortescue University of Western Australia (CET - Centre for Exploration Targeting)	4	1,493,737	733,737
M0530	Mineral systems	Yilgarn 2020	University of Western Australia (CET - Centre for Exploration Targeting) Nicolas Thebaud	BHP Nickel West Pty Ltd Bogada Gold Pty Ltd Evolution Mining Limited Gold Fields Australia Pty Ltd Gold Road Resources Ltd Newmont Mining Services Pty Ltd Northern Star Resources Limited Saracen Mineral Holdings Limited	4.58	2,346,000	796,000
M0551	Mineral systems	Integrated 3G - Geochronology-geochemistry-grain shape: a new toolkit for mineral sands understanding	Curtin University Milo Barham	Curtin University Iluka Resources	4	979,000	345,000



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0554	Mineral systems	Evolution of Proterozoic multistage rift basins – key to mineral systems - ARC Linkage proposal linked to M521	University of Western Australia Mark Jessell	Anglo American Exploration (Australia) Anglo American PLC Australian Research Council BHP Group Operations Pty Ltd IGO Limited Monash University Teck Australia Ptd Ltd	4	2,041,040	540,837
M0557	Mineral systems	Orebody knowledge, landscape history and mineralisation of Martite–Goethite Ores in the Hamersley Province (WA)	Commonwealth Scientific Industrial Research Organisation (CSIRO) Erick Ramanaidou	BHP Billiton Iron Ore Pty Ltd Bureau Veritas Minerals Pty Ltd Commonwealth Scientific Industrial Research Organisation (CSIRO) FMG Resources Pty Ltd Rio Tinto Pilbara Iron Company (Services) Pty Ltd Roy Hill Iron Ore Pty Ltd	2	1,552,000	388,000
M10412	Mineral systems	Primary and secondary high-grade gold mineralisation processes in orogenic systems: key to a sustainable mining?	University of Western Australia (CET - Centre for Exploration Targeting) Nicolas Thebaud	Australian Research Council Fosterville Gold Mine Pty Ltd Karora Resources Pty Ltd Monash University Newmont Australia Pty Ltd Northern Star Resources Limited University of Western Australia (CET - Centre for Exploration Targeting)	3	1,942,114	450,417
M10422	Mineral systems	Understanding the Mt Weld Carbonatite mineral system - a Critical Minerals super-resource in Western Australia	Murdoch University Artur Deditius	Curtin University Murdoch University Lynas Corporation Ltd	3.5	581,083	146,116



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M10426	Mineral systems	Indicator Minerals for Nickel Exploration	Commonwealth Scientific Industrial Research Organisation (CSIRO) Louise Schoneveld	Anglo American Technical & Sustainability Services Ltd Ardea Resources Limited Australian Vanadium Ltd BHP Pty Ltd Bryah Resources Estrella Resources IGO Limited St George Mining Limited Western Areas NL	2.17	1,489,677	354,914
M10433	Mineral systems	Distal footprints in the South West Terrane	Commonwealth Scientific Industrial Research Organisation (CSIRO) Ignacio Gonzalez-Alvarez	Anglo American Exploration (Australia) Department of Energy, Mines, Industry Regulation and Safety - Geological Survey of Western Australia Ramelius Resources Limited	3.17	1,233,000	308,000
M10444	Detection technology	Coiled Tubing Drilling for definition of Mineral Deposits - Phase 2: MinEx CRC Project	University of South Australia Soren Soe	Anglo American Services (UK) Ltd Anglo American Technical & Sustainability Services Ltd BHP Billiton Iron Ore Pty Ltd Department of Regional New South Wales Epiroc LKAB Wassara MinEx CRC South32 Ltd	3	2,833,505	207,561 ¹⁰
M10445	Detection technology	Petrophysics for Mineral Discovery during Drilling - Phase 2: MinEx CRC Project	Curtin University Brett Harris	Imdex Limited MinEx CRC Rio Tinto Technological Resources Pty Ltd South32	3	816,000	123,000 ¹¹

¹⁰ MRIWA support for M10444 consists of \$121,000 drawn down from MRIWA's commitment to the MinEx CRC, and an additional \$86,561 cash contribution.

¹¹ MRIWA contributions are drawn down from MRIWA's commitment to the MinEx CRC.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M10446	Detection technology	Seismic in the Drilling Workflow - Phase 2: MinEx CRC Project	Curtin University Konstantin Tertyshnikov	Anglo American Exploration (Australia) Pty Ltd BHP Pty Ltd MinEx CRC Rio Tinto Technological Resources Pty Ltd Sercel	3	940,000	123,000 ⁹
M10472	Regulatory tools and processes	Amplification of Exploration Education and Research Collaboration	CRU International (Australia) Pty Ltd Allan Trench		0.5	306,758	306,758
M10500	Mineral systems	Characterisation of clay-hosted rare-earth element deposits in Australia	RSC Global Pty Ltd Nishka Piechocka	Auric Mining Dreadnought Resources Golden Mile Resources Heavy Rare Earths Ltd Mt Ridley Mines NickelSearch Ltd Terrain Minerals Voltaic Strategic Resources	1	202,500	67,500
M10502	Mineral systems	CuBAS - Structural and sedimentological reconstruction and fluid flow simulations for copper exploration in the Yeneena Basin – Paterson Orogen, WA	Commonwealth Scientific Industrial Research Organisation (CSIRO) Susanne Schmid	BHP Metals Exploration Pty Ltd Department of Energy, Mines, Industry Regulation and Safety (GSWA)	2	600,000	150,000
M10513	Data driven decisions	A Value Case for Exploration Research: Establishing the ASX Market Value of Minerals Research in the Exploration Sector	University of Western Australia Sistine Sun		0.6	20,000	20,000 ¹²

¹² Co-operative Education for Enterprise Development project fully funded by MRIWA.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M10525	Data driven decisions	ChatGeo: Forging Trust in Spatial Semantic Document and Knowledge Retrieval	University of Western Australia Eun-Jung Holden	Department for Energy and Mining (SA) Department of Energy, Mines, Industry Regulation and Safety (GSWA)	2	300,401	100,401



PROGRAM 2: Expand the Mining Envelope

A significant proportion of the future Western Australian resource base is likely to reside in deep and complex geotechnical environments. Additionally, most major open-cut and underground operations are known to have extensions to their mineralisation, albeit at possibly lower grade. Mining methods need to adapt to allow continued economic and safe extraction of resources.

The research priority areas in Program 2 are intended to systematically advance knowledge and capability toward solutions for mining more ore from challenging deposits.

In doing so, the research will create engineering capability and demonstrate the technical feasibility of mining more selectively and deeper to:

- position Western Australia as a global leader in extraction technologies
- decrease the capital and operating costs associated with mining
- allow for safer and increased productivity from existing mines and for a new generation of deposits to be brought into production

Themes

- Deep and complex extraction systems
- Engineering in highly stressed and complex rock masses
- Mining technology
- Data driven decisions
- Energy utilisation
- Regulatory tools and processes
- Safety, social and environmental sustainability
- Workforce of the future

\$598K

MRIWA contribution

\$1.8M

Total value of research projects

3

Projects completed

5

Standalone research projects



Project Case Studies

Establishing the in situ rock bolt behaviour underground in order to model and design improved rock bolt support systems

Program 2 – Expand The Mining Envelope

STATUS: Final Report Published¹³

Project No: M0499

THE CHALLENGE

Rock bolts are subjected to complex loading conditions in underground mines with axial, shear and combined loads (axial and shear). Establishing the behaviour of in-situ rock bolts by testing and monitoring with fibre optic sensors to develop improved models and design of rock bolt support systems.

KEY FINDINGS

- Under combined load conditions: 80% of the rock bolt axial load capacity should be assumed for the rock bolt design.
- However, in situations with large shear, this is further reduced to only 50%. For both conditions, if the displacement percentage is higher than 80% then the rock bolt selection should be reconsidered (i.e. low-stiffness bar).
- FLAC3D pile elements underestimate shear deformation in the case of localised high shear stress as found in a rock bolt installed across a joint. The modified pile model can simulate the correct shear response of rock bolt and combined axial and shear load failure of the rock bolt at joints and discontinuities.
- Optical instrumented rock bolts provide a very high-resolution strain profile of the rock bolt installed in-situ.

BENEFIT TO WA

Continuous improvement in the design of rock bolts and associated support system may lead to improved safety outcomes in underground mining operations in Western Australia. A new and improved instrumented rock bolt was designed for underground testing and software development which enables strain values to be monitored.

Sponsors

Mining 3
Curtin University
Peabody Australia

Lead Organisation

Mining 3

Research Contact

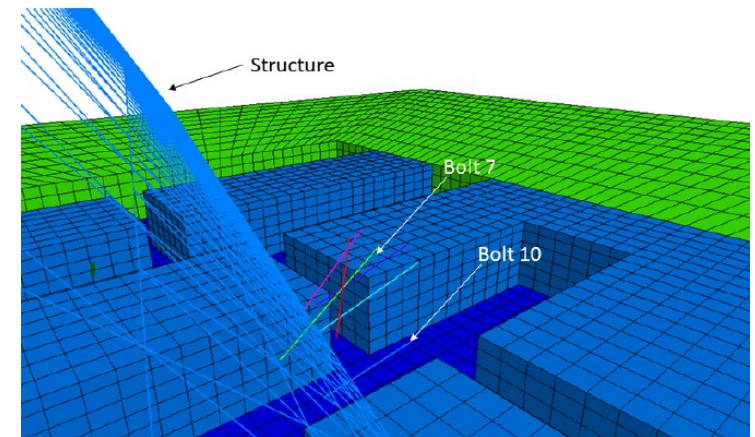
Ewan Sellers

Total Grant Value

\$1,270,000

MRIWA Contribution

\$400,000



Content: Model showing the instrumented rock bolts and the structure

¹³ <https://www.mriwa.wa.gov.au/research-projects/project-portfolio/establishing-the-in-situ-rock-bolt-behaviour-underground-in-order-to-model-and-design-improved-rock-bolt-support-systems/>



Physics Models for Ore Tracking in Surface Mines

Program 2 – Expand The Mining Envelope

STATUS: Final Report Published¹⁴

Project No: M0522

THE CHALLENGE

Undertaking material tracking in parts of the mining value chain where physical processes change the bulk shape and mixing of large scale material units, obscuring the original grade distribution. Existing tracking technologies require regular intervention, unsafe work practices and only provide data when sensors pass loggers.

KEY FINDINGS

Rapid, real time approaches to material mixing across the mining value chain were developed using algorithms and codes to predict the mixing in the stages of blasting, dozer push, stockpile stacking and depletion. Accurate GPS and dozer data are essential to validate the approach and identify how the material mixes during the transfer processes.

BENEFIT TO WA

Implementation of this software into mine systems will enable operations to plan blend strategies to improve the quality and efficiency of product delivery. Being able to process an expected blend at the correct time will reduce costs, energy and carbon footprint. Reduction of waste sent to the plant will improve throughput providing increased profitability to mining operations.

Sponsors

Fortescue Metals Group Ltd
South32

Lead Organisation

Mining 3

Research Contact

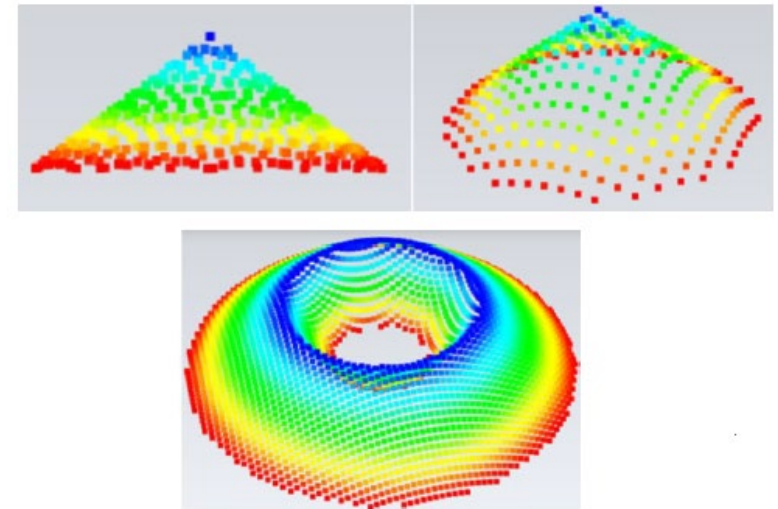
Ewan Sellers

Total Grant Value

\$760,000

MRIWA Contribution

\$380,000



Example of the outer layer of a conical stack a) side view and b) 3D view from below. Colour shading indicates the height, and c) example of a tunnel reclaim in a conical stockpile

¹⁴ <https://www.mriwa.wa.gov.au/research-projects/project-portfolio/physics-models-for-ore-tracking-in-surface-mines/>



Current Projects/ Contracts Executed

Program 2 – Expand the Mining Envelope

Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0510	Mining technology	Safe, sustainable management of filtered tailings	University of Western Australia Andy Fourie	Alcoa of Australia Ltd Alumina Quality Workshop Inc International Aluminium Institute Rio Tinto Technological Resources Pty Ltd BHP Group Operations Pty Ltd	3	482,500	142,000
M0529	Deep and complex extraction systems	Lixiviant access creation in impermeable hard rock mass for the in-situ underground leaching of metals from ore	Murdoch University Aleks Nikoloski	CMTE Development Ltd T/A Mining3 Murdoch University	5.6	120,000	30,000
M0544	Deep and complex extraction systems	Towards a mechanistic understanding of electrokinetic in-situ leaching	University of Western Australia Andy Fourie	BHP Pty Ltd Evolution Mining Limited Newcrest Mining Limited Newmont Goldcorp Services Pty Ltd	6	842,605	290,605
M0545	Deep and complex extraction systems	Evaluation of in-situ barrier technology for risk mitigation and extraction optimisation for in-situ recovery operations	Curtin University Navdeep Dhami	BHP Pty Ltd CMTE Development Ltd T/A Mining3 Newcrest Mining Limited Orano Mining	5.1	225,000	75,000
M10430	Data driven decisions	Sustainable Optimisation of Mining Complexes through Innovative Algorithms	Curtin University Waqar Asad	Norton Gold Fields Ltd	3.5	165,000	60,000



PROGRAM 3: Increase Recovered Value Through Processing

More complex and lower-grade orebodies, combined with higher energy costs and the need for a lower environmental footprint, are driving development of advanced methods of processing to transform low value deposits to be economic.

The research priority areas in Program 3 are intended to systematically advance knowledge and capability toward solutions for increasing yield and throughput and optimising the use of raw materials by breaking down operational silos.

In doing so, the research will create mineral processing capability and accelerate the development, testing, piloting, scale-up and other technical de-risking activities associated with new processing technologies to:

- position Western Australia as a global leader in mineral processing
- decrease the capital and operating costs associated with mineral processing
- allow for safer and increased productivity from processes and for a new generation of processing technologies to be deployed

Themes

- Processing Technology
- Data driven decisions
- Energy utilisation
- Regulatory tools and processes
- Safety, social and environmental sustainability
- Workforce of the future
- Interoperability

\$3.2M

MRIWA contribution

\$12.4M

Total value of research projects

2

Projects completed

6

CRC/Research centre projects

7

Standalone research projects



Green Steel Value Chain Model Demonstration Upgrade

Program 3 – Increase Recovered Value Through Processing

STATUS: Final Report Published¹⁵

Project No: M10475

THE CHALLENGE

The iron ore industry is the State’s largest and most important industry, providing direct and indirect economic and social contributions which are greater than any other industry to the State. Its contribution is also significant to the national economy.

For this reason it is important to understand the future market dynamics of the steel industry to ensure forward planning and how to ensure the longevity of the iron ore industry in Western Australia.

KEY FINDINGS

A value chain model has been constructed to analyse opportunities and key obstacles to a formation of a Western Australian green steel industry. Its main goal is to understand the capital requirements, costs and emissions for expanding beyond business as usual iron ore mining and switching from fossil fuels to renewable energy sources.

The model created for the analysis in the Western Australia’s Green Steel Opportunity Report maps the value chain of steel production in ten distinct blocks representing separate stages of the production process.

Using the model, comparisons can be drawn between fossil fuel-driven processes and existing whole-value chain costs and emissions for steel.

BENEFIT TO WA

Technologies are emerging which can, and will, begin to reduce the energy and emissions intensity of steelmaking. Overtime there will be multiple pathways to achieve net zero emissions steelmaking.

Lead Organisation

GHD Digital

Total Grant Value

\$45,000

Research Contact

Abhishek Tammina

MRIWA Contribution

\$45,000



Green Steel Value Chain Model Demonstration Interface Upgrade

¹⁵ <https://www.mriwa.wa.gov.au/research-projects/project-portfolio/green-steel-value-chain-model-demonstration-upgrade/>



Current Projects/ Contracts Executed

Program 3 – Increase Recovered Value Through Processing

Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0508a	Data driven decisions	Unlocking Knowledge from Technical Texts using Deep Active Learning and Entity Typing	University of Western Australia Tyler Bikaun		3.5	120,000	120,000 ¹⁶
M0508b	Data driven decisions	Risk-based Inspection Intervals: A Practical Approach	Curtin University Gabriel Gonzalez		3.5	120,000	120,000 ¹⁴
M0519	Processing technology	Broadening the opportunity for in-situ recovery of value from mineral deposits	CMTE Development (trading as Mining3) Ewan Sellers	Barrick Gold Corporation CMTE Development Ltd T/As Mining3 Environmental Copper Recovery Pty Ltd Freeport Minerals Corporation Gold Fields St Ives Gold Mining Company Pty Ltd Hatch Heathgate Resources Pty Ltd Mining and Process Solutions Pty Ltd Newcrest Mining Limited Newmont USA Limited Solvay-Cytec Industries Inc. BHP Group Operations Pty Ltd	4.25	960,000	240,000

¹⁶ Projects are supported by funds drawn down from MRIWA's contribution to the Centre for Transforming Maintenance Through Data Science



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0533f	Processing technology	Hydrometallurgical processing for nickel and cobalt ores, concentrates, tailings, wastes - Stage 2 (FBI CRC)	Curtin University Elsayed Oraby	Ardea Resources Limited BASF Australia Ltd BHP Nickel West Pty Ltd Blackstone Minerals Limited Future Battery Industries CRC Ltd IGO Limited JordProxa Pty Ltd Lycopodium Pty Ltd Mineral Carbonation International Pty Ltd Mining and Process Solutions Pty Ltd Pure Battery Technologies Pty Ltd	3.5	3,607,080	562,500 ¹⁷
M0533v	Processing technology	Beneficiation and chemical processing of lithium minerals - Phase 2 (FBI CRC)	Murdoch University Aleks Nikoloski	Allkem Ltd BASF Australia Ltd Calix Limited Department of the Chief Minister and Cabinet (Northern Territory) EV Metals Group PLC Future Battery Industries CRC Ltd IGO Limited JordProxa Pty Ltd Lycopodium Pty Ltd	3.4	3,195,000	673,000 ¹⁵
M0537	Processing technology	The effect of water quality on rare earth minerals flotation	Curtin University Bogale Tadesse	Curtin University Lynas Corporation Ltd Mt Weld Mining Pty Ltd	4.2	210,500	70,000
M0541	Processing technology	Organic acid leach system for rare earth extraction technology development	Curtin University Laurence Dyer	Curtin University Department of Industry, Innovation and Science Lynas Corporation Ltd Mt Weld Mining Pty Ltd	5.1	345,160	115,000
M10473	Processing technology	Microwave Reactor for Critical Minerals	Northern Minerals Louis DeKlerk	Northern Minerals	0.67	625,000	125,000

¹⁷ MRIWA contributions are drawn down from MRIWA's commitment to the FBI CRC and include Department of Jobs Tourism Science and Innovation funds



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M10477	Safety, social and environmental sustainability	Advanced electrometallurgy for improved recovery of green metals	University of Sydney Alejandro Montoya	ECOX Australia PTY LTD	3	1,515,139	378,785
M10480	Processing technology	Flexible pilot plant for low emissions iron making prefeasibility study	Commonwealth Scientific Industrial Research Organisation (CSIRO) Adrien Guiraud		0.83	450,000	450,000
M10481	Processing technology	New Opportunities for the PGM Industry in WA	Acil Allen Pty Limited Ryan Buckland		0.58	292,678	292,678
M10497	Processing technology	Green pyromet/hydromet beneficiation pathways	University of Adelaide Alfonso Chinnici	Calix Limited Curtin University FMG Procurement Services Pty Ltd HILT CRC Limited Onesteel Manufacturing Pty Ltd Roy Hill Holdings Pty Ltd South32 Group Operations Pty Ltd The Australian National University University of Adelaide	1	504,350	20,000 ¹⁸
M10504	Processing technology	The upgrading of iron ore for DRI production using products from seawater	Curtin University Jacques Eksteen	Curtin University FMG Procurement Services Pty Ltd HILT CRC Limited Roy Hill Holdings Pty Ltd University of Adelaide	1	455,000	20,000 ¹⁶

¹⁸ MRIWA contributions are drawn down from MRIWA's commitment to the HILT CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds.



PROGRAM 4: Infrastructure and Logistics

Western Australia's export-oriented mining projects place heavy demands on regional infrastructure, requiring long term planning and a high level of capital investment by both government and industry. As the sector moves to adopt automated technologies, greater demand will be placed on network bandwidths.

The research priority areas in Program 4 are intended to systematically advance knowledge and capability to:

- optimise supply chain infrastructure usage, haulage and export logistics
- enable enhanced networks and accurate geo-positioning
- decrease the capital and operating costs associated with getting commodities to market

Themes

- Communications and Positioning Technology
- Data Driven Decisions
- Energy Utilisation
- Safety, Social and Environmental Sustainability

\$800K

MRIWA contribution

\$3.3M

Total project value

3

CRC/Research centre projects



Current Projects/ Contracts Executed

Program 4 – Infrastructure and Logistics

Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0533u	Data driven decisions	Assessment, design and operation of battery-supported electric mining vehicles and machinery (FBI CRC Project)	University of Adelaide Ali Pourmousavi Kani	BHP Nickel West Pty Ltd Department for Energy and Mining (SA) Department of Energy and Public Works (Qld) Energetics Pty Ltd Future Battery Industries CRC Ltd IGO Limited Multicom Resources Limited Allkem Limited	3.5	1,160,000	300,000 ¹⁹
M10443	Energy utilisation	Stationary Mine Electrification (FBI CRC Project)	University of Western Australia Tyrone Fernando	Energetics Pty Ltd Future Battery Industries CRC Ltd Lycopodium Pty Ltd Magellan Powertronics Pty Ltd Ultra Power Systems Pty Ltd	2.5	1,112,000	300,000 ¹⁷
M10451	Energy utilisation	Development of Vanadium Electrolytes (FBI CRC Project N)	Murdoch University Aleks Nikoloski	Department of Energy and Public Works Department of the Chief Minister and Cabinet (Northern Territory) Future Battery Industries CRC Ltd King River Resources Limited Lycopodium Pty Ltd Lynas Corporation Technology Metals Australia Limited Ultra Power Systems Pty Ltd	3	1,073,000	200,000 ¹⁷

¹⁹ MRIWA contributions are drawn down from MRIWA's commitment to the FBI CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds



PROGRAM 5: New Products and Markets

Rapid adoption of new high-tech products and manufacturing processes is changing the demand for high-value, low-volume minerals and creating opportunities for the re-use and recycling of by-products and waste.

Increasing emphasis is being placed on those critical minerals which are subject to high risks of supply but represent irreplaceable inputs for important technological and industrial innovations, especially renewable energy systems, electric vehicles, rechargeable batteries, consumer electronics, telecommunications, specialty alloys, and defence technologies.

Given Western Australia is well-positioned with significant reserves of a broad variety of minerals now required globally, the research priority areas in Program 5 are intended to systematically advance knowledge and capability which will:

- create new industries
- result in increased demand for one or more minerals found in this State
- develop and demonstrate ethical and sustainable production of minerals, metals and chemicals
- create premium products which can be marketed and sold to new generations of customers

In doing so, the research will create new niche markets for minerals and position Western Australia as a global supplier of critical minerals while also creating opportunities for progressive downstream processing activity in the State.

Themes

- Strategic Foresight
- Downstream Processing Technology
- Data Driven Decisions
- Energy Utilisation
- Regulatory Tools and Processes
- Safety, Social and Environmental Sustainability
- Workforce of the future

\$4.8M

MRIWA contribution

\$31M

Total project value

10

CRC/Research centre projects

9

Standalone research projects



Current Projects/ Contracts Executed

Program 5 – New Products and Markets

Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0533d	Downstream processing technology	Process Legacy - Stage 2 (FBI CRC Project)	Curtin University Arie van Riessen	Anax Metals Limited Australasian Pozzolan Association ChemCentre Department of the Chief Minister and Cabinet (Northern Territory) EV Metals Group PLC Future Battery Industries CRC Ltd FYI Resources Limited IGO Limited	3.5	2,957,386	589,500 ²⁰
M0533h	Downstream processing technology	Cathode Precursor Production Pilot Plant - Stage 2 (FBI CRC Project)	Curtin University Alireza Rabieh	Alpha HPA Limited Ardea Resources Limited BASF Australia Ltd BHP Nickel West Pty Ltd Blackstone Minerals Limited Calix Limited ChemX Materials Ltd Cobalt Blue Holdings Limited EV Metals Group PLC Future Battery Industries CRC Ltd IGO Limited JordProxa Pty Ltd King River Resources Limited Lycopodium Pty Ltd Mn Energy Limited Pure Battery Technologies Pty Ltd	3	5,916,300	879,750 ¹⁸

²⁰ MRIWA contributions are drawn down from MRIWA's commitment to the FBI CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0533j	Data driven decisions	Establishment of the National Battery Testing Centre (FBI CRC Project)	Queensland University of Technology Joshua Watts	Australian Vanadium Ltd BASF Corporation USA BHP Nickel West Pty Ltd Calix Limited Defence Science and Technology Department of the Chief Minister and Cabinet (Northern Territory) ESS Asia Pacific Pty Ltd Future Battery Industries CRC Ltd Lava Blue Ltd Magellan Powertronics Pty Ltd Multicom Resources Limited Sunrise Energy Metals Limited Syrah Resources Ltd Ultra Power Systems Pty Ltd	4	7,145,342	200,000 ²¹
M0533k	Downstream processing technology	Super Anode (FBI CRC Project)	University of Melbourne Amanda Ellis	AnteoTech Ltd Calix Limited EcoGraf Limited Future Battery Industries CRC Ltd Koppers Carbon Minerals and Chemicals Pty Ltd Syrah Resources Ltd Talga Group Ltd	4	4,200,000	200,000 ¹⁹

²¹ MRIWA contributions are drawn down from MRIWA's commitment to the FBI CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0533m	Data driven decisions	Electrochemical Testing of Li-ion Battery Materials in Standard Cell Formats (FBI CRC Project)	Queensland University of Technology Michael Horn	Alpha HPA Limited Ardea Resources Limited BASF Australia Ltd BHP Nickel West Pty Ltd Calix Limited ChemX Materials Ltd Cobalt Blue Holdings Limited EV Metals Group PLC Future Battery Industries CRC Ltd FYI Resources Limited IGO Limited Koppers Carbon Minerals and Chemicals Pty Ltd Lava Blue Ltd Pure Battery Technologies Pty Ltd Sicona Battery Technologies Pty Ltd Sunrise Energy Metals Limited Talga Group Ltd	4	4,210,396	500,000 ²²
M0533q	Data driven decisions	Development of a trusted supply chain for Australian battery minerals and products (FBI CRC Project)	Curtin University Prokopi Vasilyev	Ardea Resources Limited Australasian Pozzolan Association BASF Australia Ltd EV Metals Group PLC Everledger Australia Pty Ltd Future Battery Industries CRC Ltd Source Certain International Pty Ltd	3	2,400,000	500,000 ²⁰

²² MRIWA contributions are drawn down from MRIWA's commitment to the FBI CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0533r	Data driven decisions	Battery Materials for a Circular Economy (FBI CRC Project)	University of Technology Sydney Damien Giurco	Ardea Resources Limited Australasian Pozzolan Association BASF Australia Ltd BHP Nickel West Pty Ltd Energetics Pty Ltd Future Battery Industries CRC Ltd IGO Limited Multicom Resources Limited Galaxy Resources Limited - now Allkem Limited	4.5	1,688,550	400,000 ²³
M10462	Strategic foresight	Roadmap to Decarbonise WA Through Integrated Mineral Carbonation	Curtin University Michael Hitch		0.58	250,000	250,000
M10469	Safety, social and environmental sustainability	Use of Industrial Tailings as Alternative to Virgin Sands	ChemCentre John Moursoundis	Albemarle Covalent Lithium Mineral Resources Limited Sustainability Waste Alliance (SWA) Northern Minerals	1.6	319,165	79,788
M10482	Safety, social and environmental sustainability	Circular Economy Assessment and Strategy	GHD Pty Ltd Huia Adkins		0.5	150,845	150,845
M10488	Safety, social and environmental sustainability	Alternative Use of Tailings and Waste - Stakeholder Engagement Workshops	Curtin University Fran Ackerman		0.92	26,000	26,000
M10505	Strategic foresight	Intermediate product exports for Australia-China green steel (HILT CRC Project)	The Australian National University Jorrit Gosens	Curtin University FMG Procurement Services Pty Ltd Grange Resources (Tasmania) Pty Ltd HILT CRC Limited Onesteel Manufacturing Pty Ltd Roy Hill Holdings Pty Ltd The Australian National University	1.25	254,461	20,000 ²⁴

²³ MRIWA contributions are drawn down from MRIWA's commitment to the FBI CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds.

²⁴ MRIWA contributions are drawn down from MRIWA's commitment to the HILT CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M10506	Strategic foresight	Analysis of market, cost and locational factors for green iron and steel in Australia (HILT CRC Project)	The Australian National University Frank Jotzo	FMG Procurement Services Pty Ltd HILT CRC Limited Onesteel Manufacturing Pty Ltd Queensland University of Technology Roy Hill Holdings Pty Ltd Swinburne University of Technology The Australian National University University of Adelaide	1.25	261,517	20,000 ²²
M10511	Strategic foresight	Western Australian Battery and Critical Minerals Institute (FBI CRC Project)	Future Battery Industries CRC Ltd Shannon O'Rourke		0.5	268,942	268,942 ²⁵
M10515	Strategic foresight	Western Australia Critical Minerals priority scheme	University of Western Australia Sineth Kannangara		0.58	20,000	20,000 ²⁶
M10521	Downstream processing technology	Pre-feasibility study into the development of a pilot plant for the adaption of Direct Lithium Extraction	Edith Cowan University Amir Razmjou		0.67	450,000	450,000
M10530	Data driven decisions	Retrieval Augmented Generation (RAG) on large technical reports ²⁷	University of Western Australia Henri Scaffidi		1	24,300	24,300
M10535	Strategic foresight	Net Zero Research Development and Demonstration Roadmap	Low Carbon Australia Pty Ltd Tristy Fairfield	Department of Jobs Tourism Science and Innovation	0.5	450,000	150,000
M10576	Data driven decisions	Enabling utilisation of information generated by MRIWA funded grants	Samarah Solutions Melinda Hodkiewicz		0.25	20,000	20,000

²⁵ MRIWA contributions are drawn down from MRIWA's commitment to the FBI CRC and include Department of Jobs Tourism Science and Innovation (JTSI) funds.

²⁶ Co-operative Education for Enterprise Development project fully funded by MRIWA.

²⁷ Co-operative Education for Enterprise Development project fully funded by MRIWA.



PROGRAM 6: Remediation and Mine Closure

An increasing number of Western Australian mining operations are approaching scheduled mine closure with a lack of certainty in the process for relinquishment of rehabilitated land to the State and the potential for trailing liabilities.

To meet the challenge of mine closure and to support the Western Australian Biodiversity Science Institute's Research Priorities and other work happening across government, the research priority areas in Program 6 are intended to systematically advance knowledge and capability toward developing new technologies and approaches for mine remediation and alternative land use, while filling knowledge gaps to ensure a sustainable positive legacy for the industry and surrounding communities.

In doing so, the research will:

- position Western Australia as a global leader in mine closure
- decrease the capital and operating costs associated with remediation and mine closure
- support evidence-based decision making

Themes

- Acid Mine drainage and treatment of tailings
- Sustainable land use post-mining
- Data driven decisions
- Regulatory tools and processes
- Safety, social and environmental stability

\$414K
MRIWA contribution

\$5.4M
Total project value

1
Projects completed

3
CRC/Research centre projects

2
Standalone research projects



Project Case Studies

Opportunities for growth in Australian Mine closure solutions (MCS) industry

Program 6 – Remediation and Mine Closure

STATUS: Final Report Published²⁸

Project No: M10476

THE CHALLENGE

As a significant mining jurisdiction, WA has many operating mines approaching their planned end of life. Although the closure of mine sites is expensive for both mining companies and governments, mine closure activities can also offer a revenue stream for a range of businesses, and this economic opportunity is expected to grow in coming decades.

KEY FINDINGS

This project identified a market for Australian mine closure solutions (MCS) providers over the coming decades that could exceed \$4 billion annually across four categories of industry activity: engagement and partnership with communities impacted by mining; waste reduction and recovery; mine rehabilitation, and; land use transitions.

To realise this opportunity MCS industry participants need to work collaboratively with mining companies, government and the other partners they service to demonstrate the success and value that can be delivered through well-managed mine closure.

BENEFIT TO WA

The findings of this project are supporting the planning and structured development of the mine closure ecosystem in Western Australia. This strategic approach to development is helping ensure relevant services and infrastructure are available to meet the future closure needs of the local mining sector, delivering positive outcomes for mining communities and positioning WA as a leading provider of mine closure solutions.

Sponsors

Cooperative Research Centre for Transformations in Mining Economies (CRC TiME)
Deswick Mining Consultants (Australia) Pty Ltd
Ecoplant Australia Pty Ltd
Fortescue Metals Group Ltd
GHD Pty Ltd

Lead Organisation

Commonwealth Scientific Industrial Research Organisation (CSIRO)

Research Contact

Dominic Banfield

Total Grant Value

\$410,350

MRIWA Contribution

\$50,000



Image courtesy of CSIRO Australia's National Science Agency

²⁸ <https://www.mriwa.wa.gov.au/research-projects/project-portfolio/opportunities-for-growth-in-australian-mine-closure-solutions-mcs-industry/>



Current Projects/Contracts Executed

Program 6 – Remediation and Mine Closure

Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M0513	Regulatory tools and processes	Validation and standardisation of sequential leaching tools to better predict the impact of iron ore mining on ground and surface water quality – Phase 2	ChemCentre John Moursounidis	BHP Billiton Iron Ore Pty Ltd CRC for Contamination Assessment and Remediation of the Environment (CRC CARE) Fortescue Metals Group Ltd Rio Tinto Limited (Iron Ore)	2.92	525,000	216,000
M10409	Acid mine drainage and treatment of tailings	How can CRC TiME help industry, government and communities prevent closure related acid and metalliferous drainage (AMD) impacts?	University of Western Australia Carolyn Oldham	CRC for Transitions in Mining Economies (CRC TiME)	0.67	100,000	15,000 ²⁹
M10413	Sustainable land use post-mining	Post Mining Land Use – Practice Mapping Options	University of South Australia Andrew Beer	CRC for Transitions in Mining Economies (CRC TiME)	1	149,459	15,000 ²⁵

²⁹ MRIWA contributions are drawn down from MRIWA's commitment to the CRC TiME.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M10442	Acid mine drainage and treatment of tailings	Improved Prediction, Remediation and Closure of Acid and Neutral Metalliferous Drainage (AMD/NMD) Sites (CRC TiME Project)	Flinders University Sarah Harmer	Australian Genome Research Facility Limited Australian Research Council BHP Group Operations Pty Ltd CRC for Transitions in Mining Economies (CRC TiME) Fortescue Metals Group Ltd MMG Australia Ltd Newmont Mining Services Pty Ltd Rio Tinto Services Limited Teck Resources Limited	5	4,558,586	125,000 ³⁰
M10447	Acid mine drainage and treatment of tailings	Wetland in a Box (EnphytoBox®) - a smart water treatment system to support the decarbonisation of water in mining	Syrinx Environmental PL Kathy Meney	Syrinx Environmental PL	0.83	86,600	43,300

³⁰ MRIWA contributions are drawn down from MRIWA's commitment to the CRC TiME.



Project No	Theme	Project Title	Lead Org. and Contact	Sponsors	Duration (yrs)	Total Project Value \$	MRIWA Contribution \$
M10476	Safety, social and environmental sustainability	Opportunities for Growth in Australia's Mine Closure Solutions Industry (CRC TiME Project)	Commonwealth Scientific Industrial Research Organisation (CSIRO) Dominic Banfield	Commonwealth Scientific Industrial Research Organisation (CSIRO) CRC TiME Department of State Growth, Tasmanian Government Deswick Mining Consultants (Australia) Pty Ltd Ecocene (Emapper) Ecoplant Australia Pty Ltd EnviroMETS (Qld) Ltd Fortescue Metals Group Ltd GHD Pty Ltd Intract Australia Pty Ltd K2Fly Ltd T/as Decipher Landloch Pty Ltd METS Ignited Australia Ltd O'Kane Consultants Pty Ltd Queensland Department of State Development, Infrastructure, Local Government and Planning Sustainable Solutions Global Pty Ltd University of Queensland	0.5	410,350	50,000 ²⁸



Education Program

MRIWA provides a program of scholarships and education opportunities to shape and empower future mining industry thought leaders.

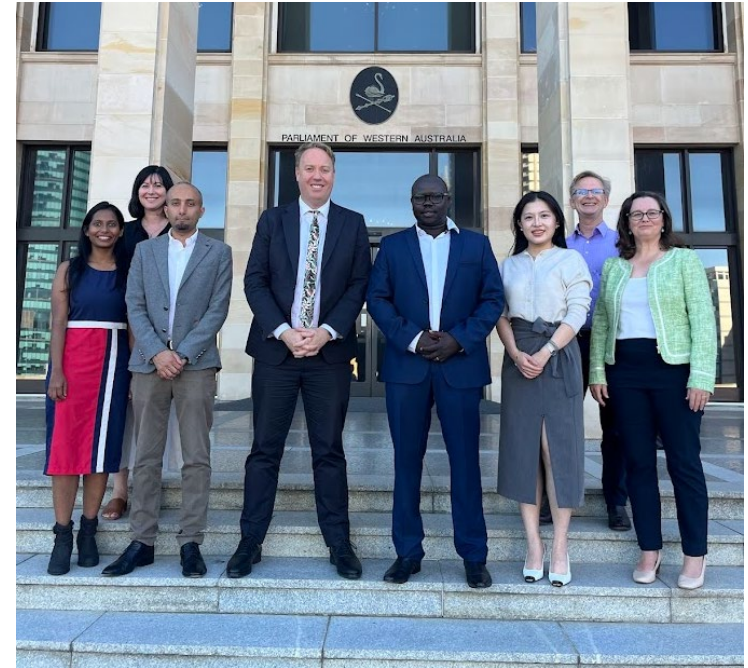
The MRIWA Education Program supports the development of exceptional talent to help meet the future needs of the Western Australian mining industry through:

- Attracting domestic and international applicants of exceptional academic capability to the Western Australian research community.
- Effectively marketing MRIWA and the participating universities and research institutions.
- Expanding the diversity of research supported by MRIWA.
- Producing highly skilled graduates aligned to the needs of the Western Australia mining sector.

Education Program components

- A minimum of three prestigious MRIWA scholarships available each year to support post-graduate research students at Western Australian universities.
- Tailored professional and communication skills training for research students and professionals accepted into the MRIWA program.
- Outreach and mentoring to encourage students of exceptional ability to consider careers in the mining industry.
- Administration of PhD scholarships awarded under the WA Government MARS (Mental Awareness, Respect and Safety) Program.
- Sponsorship of the work of Australian Earth Science Education³¹ (formerly Earth Science Western Australia) supporting earth science teaching in WA schools.
- Professional Development Bursary support for minerals research and industry professionals

³¹ <https://ausearthed.com.au/wa/>



Pictured (L-R) MRIWA PhD Scholar Yamini Kannappan, MRIWA PPO Melissa Cianfrini, MRIWA PhD Scholar Emad Al-Hemyari, the Hon. David Michael MLA, Minister for Mines and Petroleum; Ports; Road Safety; Minister Assisting the Minister for Transport, MARS Program PhD Scholar Michael Ajith, MRIWA PhD Scholar Sistine Sun, MRIWA RPM Geoffrey Batt and MRIWA Chair Miriam Stanborough at the 2024 MRIWA Scholarship Induction event, Parliament House



MRIWA Scholarships

MRIWA Scholarships are awarded through a competitive application process to students undertaking research aligned to MRIWA's Research Priority Plan at any university in Western Australia.

The MRIWA scholarship program currently supports the studies and professional development of a cohort of 17 students undertaking PhD degrees at three different Western Australian universities. Two student projects supported under the program were successfully completed in 2023-24.

This scholarship program delivers on MRIWA's mission for applied research to create capability and deliver economic and social benefit for Western Australia by supporting the development of professionals prepared for the future workforce needs of the minerals industry.

On an annual basis, subject to availability of funds and receipt of suitable applications, MRIWA may award:

- 3 Postgraduate research scholarships each valued at no less than \$46,559 per year
 - o MRIWA Odwyn Jones PhD Scholarship
 - o MRIWA PhD Scholarship for Women
 - o MRIWA Indigenous Postgraduate Scholarship

MRIWA's support for scholarships directed at groups traditionally under-represented in mining industry leadership positions contributes to a diverse and innovative minerals industry delivering value to all Western Australians.

MRIWA also:

- funds the scholarships of two students undertaking PhD research within the ARC Centre for Transforming Maintenance through Data Science,
- administers Mental Awareness, Respect and Safety (MARS) Program PhD Scholarships on behalf of the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), and
- indirectly supports a further 57 PhD students and 8 students completing other higher degrees by research funded under individual projects in the research portfolio summarised in the previous section.

MRIWA's Professional Development Bursary program also currently provides 9 awardees with a suite of training opportunities supporting professional practice and career success spanning the boundaries of applied minerals research and innovation.



2024 MRIWA Scholarship Recipients

Yamini Kannappan – MRIWA PhD Scholarship for Women

Project Title

Extraction of Rare Earth Elements (REE) from Sub-economic Ores and Process Tailings

Host University	Curtin University	MRIWA Contribution
Project Number	M10541	\$26,207 over 1.5 years
Status	Commenced	

Yamini completed her undergraduate studies in Metallurgical Engineering at PSG College of Technology at Anna University, India, and holds a Master of Engineering Science (Metallurgy) from Curtin University.

She was awarded the 2024 MRIWA PhD Scholarship for Women for her PhD research under the supervision of Associate Professor Laurence Dyer, Dr Bogale Tadesse and Dr Richard Alorro at the Western Australian School of Mines: Minerals, Energy and Chemical Engineering (WASM: MECE).

Yamini is developing an environmentally friendly method for extracting Rare Earth Elements (REE) from low-grade ores and process tailings using green solvents. Her work could help unlock WA reserves to increase global supply of these critical elements and create value for WA.

Emad Al-Hemyari – MRIWA Odwyn Jones PhD Scholarship

Project Title

Data Processing and Inversion for Seismic While Drilling and Mining Using Distributed Acoustic Sensing and Machine learning

Host University	Curtin University	MRIWA Contribution
Project Number	M10540	\$34,942 over 2.5 years
Status	Commenced	

Emad holds a Bachelor of Science in Electrical Engineering from King Fahd University of Petroleum & Minerals and a Master of Science in Electrical Engineering from King Abdullah University of Science and Technology in Saudi Arabia.

He was awarded the 2024 MRIWA Odwyn Jones PhD Scholarship under the supervision of Drs Konstantin Tertyshnikov and Olivia Collet and Professors Roman Pevzner and Andrej Bona at Curtin University, and Dr Tim Dean at Anglo American Exploration Pty Ltd.

Emad is developing non-invasive methods for processing and analysing passive seismic data. Various physics-based methods, machine learning and their applications will be investigated to infer valuable information for data-driven decision-making for resource exploration.



Sistine Sun – MRIWA PhD Scholarship

Project Title

The Unintended Effects of Carbon Emission Policy: International Evidence from the Paris Agreement

Host University	University of Western Australia	MRIWA Contribution
Project Number	M10542	\$116,398 over 2.5 years
Status	Commenced	

Sistine holds a Bachelor of Management (Business Administration) from Shandong University in China, a Bachelor of Business Administration (Accounting) (Magna Cum Laude) from the University of Cincinnati (USA), and a Master of Commerce (Advanced) from Australian National University.

She was awarded a MRIWA PhD Scholarship to support her PhD studies under Associate Professor George Shan and Dr Lyndie Bayne at the UWA Business School.

Sistine's research investigates the impact of carbon emissions on tax and investment behaviour within WA's minerals sector, leveraging the Paris Agreement as a global catalyst. She is also exploring the impact of tax avoidance behaviour, with international insights revealing how national institutions shape regulatory outcomes, directly benefiting local regulators and mining companies.

Muzammil Khan – MRIWA PhD Scholarship

Project Title

Towards decarbonisation in steelmaking: Grey-box modelling for optimisation of green and sustainable metallurgical coke production from biomass

Host University	Murdoch University	MRIWA Contribution
Project Number	M10544	\$61,149 over 3.5 years
Status	Commenced	

Muzammil holds a Bachelor of Science in Chemical Engineering from the University of Engineering & Technology in Pakistan, and a Master of Science in Process Systems Engineering from the National University of Sciences and Technology (Pakistan).

Muzammil was awarded a MRIWA PhD Scholarship to support his studies in the Centre for Water, Energy and Waste at Murdoch University's Harry Butler Institute, under the supervision of Drs Xiangpeng Gao and Kevin Wong.

Muzammil's research will develop a comprehensive grey-box modelling framework for enhancing green metallurgical coke production from biomass to enhance decision-making and optimising steel production by integrating machine learning and mechanistic modelling.



Michael Ajith – MARS Program PhD Scholarship

Project Title

Impact of COVID-19 on the leadership of operational leaders in the oil, gas, and mining sector of Australia

Host University	Edith Cowan University	MRIWA Contribution
Project Number	M10562	\$104,758 over 4.6 years
Status	Commenced	

Michael holds a Bachelor of Engineering Science (Mining Engineering) and a Master of Mining Engineering from the University of Ballarat, and a PhD in Mining and Metallurgical Engineering from Curtin University.

Michael has been awarded the inaugural MARS PhD Scholarship for his ongoing studies at ECU under the supervision of Professor Tim Bentley, and Drs Michelle Striepe and Andrei Lux.

Michael's research will investigate the impact of COVID-19 on the roles and leadership styles of Australian resource industry operational leaders, focusing on their role in fostering employee wellbeing and resilience. The findings will inform strategies for enhancing leadership practices and promoting resilience in the face of challenges within the industry.



MRIWA PhD Scholarships

MRIWA PhD Scholarships are awarded through a competitive application process to students undertaking research aligned to MRIWA's Research Priority Plan at any university in Western Australia. One or more MRIWA PhD Scholarships may be awarded annually at the discretion of the MRIWA Board.

Current recipients

Project No	Scholarship Recipient	Project Title	Host University	Duration (yrs)	Status	MRIWA Contribution \$
M10408	Alexandra Halliday	Integrating field monitoring and numerical modelling to better quantify the stability of tailings storage facilities	University of Western Australia	3.5	Commenced	52,973
M10486	Daniel Goldstein	Orebody Characterisation using Machine Learning and Measure-While-Drilling Data	Curtin University	2.9	Commenced	45,598
M10487	Nilan Jayasiri Mudiyansele	Accelerating Consolidation of Mine Tailings using Electro-osmosis Dewatering Technology	University of Western Australia	3.5	Commenced	58,034



MRIWA PhD Scholarships for Women

The MRIWA PhD Scholarships for Women is awarded annually. It was first awarded in 2018 and aims to promote opportunities for women in higher-degree research in the minerals sector.

Current recipients

Project No	Scholarship Recipient	Project Title	Host University	Duration (yrs)	Status	MRIWA Contribution \$
M0524	Kudzai Angeline Mchibwa	Direct Methods for Lithium Extraction from Lepidolite and Spodumene Minerals	Murdoch University	4	Commenced	120,000
M0547	Polyanna Moro	Geodynamics and basin evolution of the Paterson Orogen from the Paleoproterozoic to Neoproterozoic based on 3D geophysical modelling and data inversion	University of Western Australia	4	Commenced	76,200
M0563	Alicja Polewacz	Processes at the interface between fluids and lithium minerals	Murdoch University	3.5	Commenced	140,000
M10452	Bishenka Mahaulpatha	Feasibility of effective metal recovery from tailings material via electrokinetic in-situ leaching	University of Western Australia	3.5	Commenced	144,228
M10485	Hyunjin Na	Development of cementation-magnetic separation method for sulfide mineral processing and AMD prevention	Curtin University	3.3	Commenced	143,735



MRIWA Odwyn Jones PhD Scholarships

The MRIWA Odwyn Jones PhD Scholarships is awarded annually. This prestigious scholarship is named for Emeritus Professor Odwyn Jones AO, in recognition of his outstanding contribution to education in support of the mining industry in Western Australia.

Current recipients

Project No	Scholarship Recipient	Project Title	Host University	Duration (yrs)	Status	MRIWA Contribution \$
M0548	Xingjie Chen	Investigating the underground support provided by shotcrete using tailings and waste rock	University of Western Australia	4	Commenced	120,000
M0561	John Grigson	Giant rare-metal pegmatite deposits of the East Pilbara Terrane, Western Australia: mineral systems analysis and criteria for terrane-scale exploration	University of Western Australia	3.5	Commenced	52,500
M10406	Liz Wall	Evaluating the mining industry's view of their success in delivering a positive legacy for host communities at the time of mine closure	University of Western Australia	5	Commenced	52,973
M10453	Kylie Blackwell	Beneficiation of Gold Telluride Ores	Curtin University	2.7	Commenced	41,208
M10484	Alex Eves	Petrogenesis and metallogenic significance of the Speewah V-Ti Deposit - a large-scale orthomagmatic deposit and associated PGE+Au reef hosted within a multi-stage intrusive sill of the Hart-Carson Large Igneous Province, North Australian Craton	University of Western Australia	2.9	Commenced	48,361

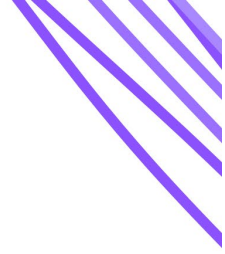


2023 -2024 Completed MRIWA PhD Scholarships

Current recipients

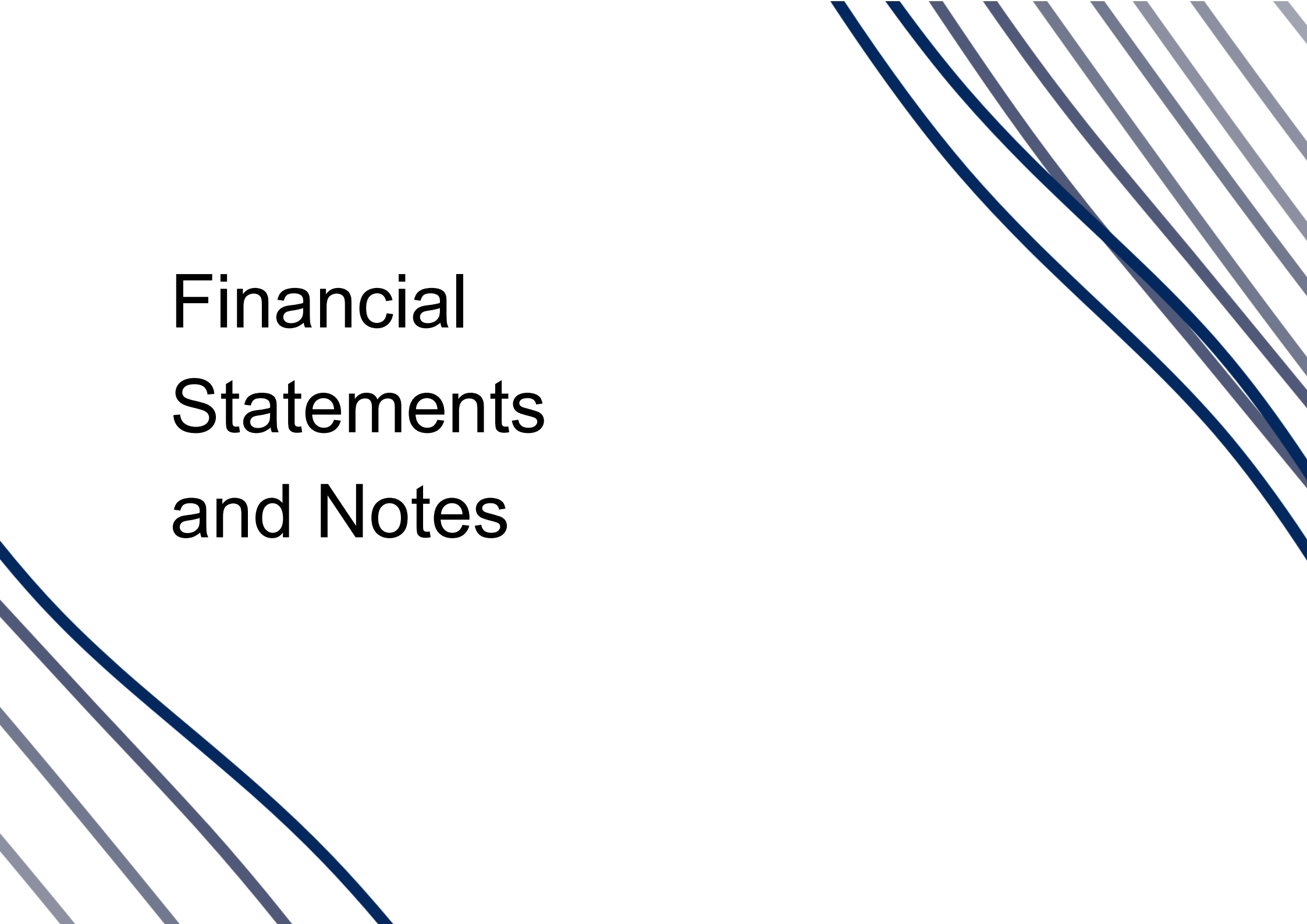
Project No	Scholarship Recipient	Project Title	Host University	Duration (yrs)	Status	MRIWA Contribution \$
M0501	Yihao Fu	Director's Scholarship - Yihao Fu Characterization of ore and bulk solid systems by use of multivariate by image analysis and deep learning neural networks	Curtin University	3.5	Completed	104,006
M10407	Devika Bhatia	Taxation of Australian Mining Firms	University of Western Australia	2.6	Completed	107,627





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Financial Statements and Notes

Financial Statements and Notes

Certification of Financial Statements

For the year ended 30 June 2024

The accompanying financial statements of the Minerals Research Institute of Western Australia (MRIWA or the Institute) have been prepared in compliance with the provisions of the *Financial Management Act 2006* (WA) from proper accounts and records to present fairly the financial transactions for the financial year ended 30 June 2024 and the financial position as at 30 June 2024.

At the date of signing, we are not aware of any circumstances which would render the particulars included in the financial statements misleading or inaccurate.



Miriam Stanborough
Chairperson of the Board

Date: 19 August 2024



Linda Tompkins
Deputy Chairperson of the Board

Date: 19 August 2024



Nicole Roocke
Chief Financial Officer

Date: 19 August 2024



Independent Auditor's Report



Auditor General

INDEPENDENT AUDITOR'S REPORT
2024

Minerals Research Institute of Western Australia

To the Parliament of Western Australia

Report on the audit of the financial statements

Opinion

I have audited the financial statements of the Minerals Research Institute of Western Australia (Institute) which comprise:

- the statement of financial position as at 30 June 2024, the statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended
- notes comprising a summary of material accounting policies and other explanatory information.

In my opinion, the financial statements are:

- based on proper accounts and present fairly, in all material respects, the operating results and cash flows of the Minerals Research Institute of Western Australia for the year ended 30 June 2024 and the financial position as at the end of that period
- in accordance with Australian Accounting Standards (applicable to Tier 2 Entities), the *Financial Management Act 2006* and the Treasurer's Instructions.

Basis for opinion

I conducted my audit in accordance with the Australian Auditing Standards. My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of my report.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

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7th Floor Albert Foye House 469 Wellington Street Perth MAIL TO: Perth BC PO Box 8489 Perth WA 6849 TEL: 08 6557 7500

Responsibilities of the Board for the financial statements

The Board is responsible for:

- keeping proper accounts
- preparation and fair presentation of the financial statements in accordance with Australian Accounting Standards (applicable to Tier 2 Entities), the *Financial Management Act 2006* and the Treasurer's Instructions
- such internal control as it determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board is responsible for:

- assessing the entity's ability to continue as a going concern
- disclosing, as applicable, matters related to going concern
- using the going concern basis of accounting unless the Western Australian Government has made policy or funding decisions affecting the continued existence of the Institute.

Auditor's responsibilities for the audit of the financial statements

As required by the *Auditor General Act 2006*, my responsibility is to express an opinion on the financial statements. The objectives of my audit are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Australian Auditing Standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control.

A further description of my responsibilities for the audit of the financial statements is located on the Auditing and Assurance Standards Board website. This description forms part of my auditor's report and can be found at https://www.ausb.gov.au/auditors_responsibilities/ar4.pdf

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Financial Statements and Notes

Report on the audit of controls

Opinion

I have undertaken a reasonable assurance engagement on the design and implementation of controls exercised by the Minerals Research Institute of Western Australia. The controls exercised by the Minerals Research Institute of Western Australia are those policies and procedures established to ensure that the receipt, expenditure and investment of money, the acquisition and disposal of property, and the incurring of liabilities have been in accordance with the State's financial reporting framework (the overall control objectives).

In my opinion, in all material respects, the controls exercised by the Minerals Research Institute of Western Australia are sufficiently adequate to provide reasonable assurance that the controls within the system were suitably designed to achieve the overall control objectives identified as at 30 June 2024, and the controls were implemented as designed as at 30 June 2024.

The Board's responsibilities

The Board is responsible for designing, implementing and maintaining controls to ensure that the receipt, expenditure and investment of money, the acquisition and disposal of property and the incurring of liabilities are in accordance with the *Financial Management Act 2006*, the Treasurer's Instructions and other relevant written law.

Auditor General's responsibilities

As required by the *Auditor General Act 2006*, my responsibility as an assurance practitioner is to express an opinion on the suitability of the design of the controls to achieve the overall control objectives and the implementation of the controls as designed. I conducted my engagement in accordance with Standard on Assurance Engagements ASAE 3150 Assurance Engagements on Controls issued by the Australian Auditing and Assurance Standards Board. That standard requires that I comply with relevant ethical requirements and plan and perform my procedures to obtain reasonable assurance about whether, in all material respects, the controls are suitably designed to achieve the overall control objectives and were implemented as designed.

An assurance engagement involves performing procedures to obtain evidence about the suitability of the controls design to achieve the overall control objectives and the implementation of those controls. The procedures selected depend on my judgement, including an assessment of the risks that controls are not suitably designed or implemented as designed. My procedures included testing the implementation of those controls that I consider necessary to achieve the overall control objectives.

I believe that the evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

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Limitations of controls

Because of the inherent limitations of any internal control structure, it is possible that, even if the controls are suitably designed and implemented as designed, once in operation, the overall control objectives may not be achieved so that fraud, error or non-compliance with laws and regulations may occur and not be detected. Any projection of the outcome of the evaluation of the suitability of the design of controls to future periods is subject to the risk that the controls may become unsuitable because of changes in conditions.

Report on the audit of the key performance indicators

Opinion

I have undertaken a reasonable assurance engagement on the key performance indicators of the Minerals Research Institute of Western Australia for the year ended 30 June 2024 reported in accordance with *Financial Management Act 2006* and the Treasurer's Instructions (legislative requirements). The key performance indicators are the Under Treasurer-approved key effectiveness indicators and key efficiency indicators that provide performance information about achieving outcomes and delivering services.

In my opinion, in all material respects, the key performance indicators report of the Minerals Research Institute of Western Australia for the year ended 30 June 2024 is in accordance with the legislative requirements, and the key performance indicators are relevant and appropriate to assist users to assess the Institute's performance and fairly represent indicated performance for the year ended 30 June 2024.

The Board's responsibilities for the key performance indicators

The Board is responsible for the preparation and fair presentation of the key performance indicators in accordance with the *Financial Management Act 2006* and the Treasurer's Instructions and for such internal controls as the Board determines necessary to enable the preparation of key performance indicators that are free from material misstatement, whether due to fraud or error.

In preparing the key performance indicators, the Board is responsible for identifying key performance indicators that are relevant and appropriate, having regard to their purpose in accordance with Treasurer's Instruction 904 Key Performance Indicators.

Auditor General's responsibilities

As required by the *Auditor General Act 2006*, my responsibility as an assurance practitioner is to express an opinion on the key performance indicators. The objectives of my engagement are to obtain reasonable assurance about whether the key performance indicators are relevant and appropriate to assist users to assess the entity's performance and whether the key performance indicators are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. I conducted my engagement in accordance with Standard on Assurance Engagements ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information* issued by the Australian Auditing and Assurance Standards Board. That standard requires that I comply with relevant ethical requirements relating to assurance engagements.

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Financial Statements and Notes

An assurance engagement involves performing procedures to obtain evidence about the amounts and disclosures in the key performance indicators. It also involves evaluating the relevance and appropriateness of the key performance indicators against the criteria and guidance in Treasurer's Instruction 904 for measuring the extent of outcome achievement and the efficiency of service delivery. The procedures selected depend on my judgement, including the assessment of the risks of material misstatement of the key performance indicators. In making these risk assessments, I obtain an understanding of internal control relevant to the engagement in order to design procedures that are appropriate in the circumstances.

I believe that the evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

My independence and quality management relating to the report on financial statements, controls and key performance indicators

I have complied with the independence requirements of the *Auditor General Act 2006* and the relevant ethical requirements relating to assurance engagements. In accordance with ASQM 1 *Quality Management for Firms that Perform Audits or Reviews of Financial Reports and Other Financial Information, or Other Assurance or Related Services Engagements*, the Office of the Auditor General maintains a comprehensive system of quality management including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Other information

Those charged with governance are responsible for the other information. The other information is the information in the entity's annual report for the year ended 30 June 2024, but not the financial statements, key performance indicators and my auditor's report.

My opinions on the financial statements, controls and key performance indicators do not cover the other information and accordingly I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, controls and key performance indicators my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements and key performance indicators or my knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I did not receive the other information prior to the date of this auditor's report. When I do receive it, I will read it and if I conclude that there is a material misstatement in this information, I am required to communicate the matter to those charged with governance and request them to correct the misstated information. If the misstated information is not corrected, I may need to retract this auditor's report and re-issue an amended report.

Matters relating to the electronic publication of the audited financial statements and key performance indicators

This auditor's report relates to the financial statements and key performance indicators of the Minerals Research Institute of Western Australia for the year ended 30 June 2024 included in the annual report on the Institute's website. The Institute's management is responsible for the integrity of the Institute's website. This audit does not provide assurance on the integrity of the Institute's website. The auditor's report refers only to the financial statements, controls and key performance indicators described above. It does not provide an opinion on any other information which may have been hyperlinked to from the annual report. If users of the financial statements and key performance indicators are concerned with the inherent risks arising from publication on a website, they are advised to contact the entity to confirm the information contained in the website version.



Aram Madnack
Acting Senior Director Financial Audit
Delegate of the Auditor General for Western Australia
Perth, Western Australia
29 August 2024



Financial Statements and Notes

Statement of Comprehensive Income

For the year ended 30 June 2024

	Notes	2024	2023
			\$
COST OF SERVICES			
Expenses			
Research grants		4,115,858	5,291,879
Scholarships and awards		208,937	299,655
Employee benefits expense	2.1.1	1,565,128	1,259,564
Board and committee fees and costs	2.2	122,296	112,201
Supplies and services	2.3	463,804	529,435
Other expenses	2.3	119,354	93,589
Accommodation expenses		213,306	109,894
Depreciation expense	4.1	277	-
Total cost of services		6,808,960	7,696,217
Income			
Revenue & Income			
Interest revenue		808,381	477,856
Other revenue	3.3	189,408	266,308
Revenue from Sponsorship	3.2	925,108	1,751,225
Total Revenue & Income		1,922,897	2,495,389
Total income other than income from State Government		1,922,897	2,495,389
NET COST OF SERVICES		4,886,063	5,200,828

	Notes	2024	2023
		\$	\$
Income from State Government			
State Government Grant	3.1	7,631,000	6,915,000
Resources received free of charge	3.1	217,216	110,034
Total income from State Government		7,848,216	7,025,034
SURPLUS FOR THE PERIOD		2,962,153	1,824,206
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD		2,962,153	1,824,206

The Statement of Comprehensive Income should be read in conjunction with the accompanying notes.



Financial Statements and Notes

Statement of Financial Position

As at 30 June 2024

	Notes	2024 \$	2023 \$
ASSETS			
Current Assets			
Cash and cash equivalents	6.1.1	11,619,509	7,225,344
Restricted cash and cash equivalents	6.1.2	8,091,798	8,835,922
Receivables	5.1	685,730	489,901
Other current assets	5.2	237,050	179,752
Total Current Assets		20,634,087	16,730,919
Non-Current Assets			
Office equipment	4.1	12,723	-
Total Non-Current assets		12,723	-
TOTAL ASSETS		20,646,810	16,730,919

	Notes	2024 \$	2023 \$
LIABILITIES			
Current Liabilities			
Payables	5.3	392,597	77,445
Employee benefit provisions - Current	2.1.2	181,466	81,243
Deferred income	5.4	2,844,957	2,275,266
Total Current Liabilities		3,419,020	2,433,954
Non-Current Liabilities			
Employee benefit provisions - Non-Current	2.1.2	57,855	89,183
Total Non-Current Liabilities		57,855	89,183
TOTAL LIABILITIES		3,476,875	2,523,137
NET ASSETS		17,169,935	14,207,782
EQUITY			
Accumulated surplus	8.8	17,169,935	14,207,782
TOTAL EQUITY		17,169,935	14,207,782

The Statement of Financial Position should be read in conjunction with the accompanying notes.



Financial Statements and Notes

Statement of Changes in Equity

For the year ended 30 June 2024

	Notes	Accumulated Surplus \$
Balance at 1 July 2022		12,383,576
Surplus for the period	8.8	1,824,206
Balance at 30 June 2023		14,207,782
Balance at 1 July 2023		14,207,782
Surplus for the period	8.8	2,962,153
Balance at 30 June 2024		17,169,935

The Statement of Changes in Equity should be read in conjunction with the accompanying notes.



Financial Statements and Notes

Statement of Cash Flows

For the year ended 30 June 2024

Notes	2024 \$	2023 \$
CASH FLOWS FROM STATE GOVERNMENT		
State Government Grant	7,631,000	6,915,000
Net cash provided by State Government	7,631,000	6,915,000
Utilised as follows:		
CASH FLOWS FROM OPERATING ACTIVITIES		
Payments		
Research Grant Payments and Scholarship	(4,055,334)	(5,591,534)
Employee benefits	(1,481,710)	(1,263,045)
Board and Advisory committee fees	(65,965)	(49,468)
Supplies, Services and Other Expenses	(536,895)	(622,422)
GST paid on purchases	(436,976)	(596,872)
Receipts		
Receipts from Sponsors	1,089,390	720,109
Receipts from Events	155,577	236,075
Interest received	739,899	377,086
GST received on sales	208,225	112,265
Net GST refunded from ATO (or paid)	415,830	569,989
Net cash used in operating activities	(3,967,959)	(6,107,817)

Notes	2024 \$	2023 \$
CASH FLOWS FROM INVESTING ACTIVITIES		
Payments		
Purchase of non-current assets	(13,000)	-
Net cash used in investing activities	(13,000)	
Net increase in cash and cash equivalents		
	3,650,041	807,183
Cash and cash equivalents at the beginning of the period		
	16,061,266	15,254,083
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD	19,711,307	16,061,266
6.1.1		

The Statement of Cash Flows should be read in conjunction with the accompanying notes.



Financial Statements and Notes

Notes to the Financial Statements

For the year ended 30 June 2024

Note 1. Basis of preparation

The Institute is a Government not-for-profit entity controlled by the State of Western Australia, which is the ultimate parent.

A description of the nature of its operations and its principal activities have been included in the 'Overview' and 'Our Projects' sections of the Institute's Annual Report which does not form part of these financial statements.

These annual financial statements were authorised for issue by the accountable authority of the Institute on 19 August 2024.

Statement of compliance

The financial statements constitute general purpose financial statements that have been prepared in accordance with Australian Accounting Standards, the Framework, Statement of Accounting Concepts and other authoritative pronouncements of the Australian Accounting Standards Board as applied by Treasurer's instructions. Several of these are modified by Treasurer's instructions to vary application, disclosure, format and wording.

The Act and Treasurer's instructions are legislative provisions governing the preparation of financial statements and take precedence over Australian Accounting Standards, the Framework, Statement of Accounting Concepts and other authoritative pronouncements of the Australian Accounting Standards Board. Where modification is required and has had a material or significant financial effect upon the reported results, details of that modification and the resulting financial effect are disclosed in the notes to the financial statements.

Basis of preparation

The financial statements are presented in Australian dollars applying the accrual basis of accounting and using the historical cost convention. Certain balances will apply a different measurement basis (such as the fair value basis). Where this is the case the different measurement basis is disclosed in the associated note.

Judgements and estimates

Judgements, estimates, and assumptions are required to be made about financial information being presented. The significant judgements and estimates made in the preparation of these financial statements are disclosed in the notes where amounts affected by those judgements and/or estimates are disclosed. Estimates and associated assumptions are based on professional judgements derived from historical experience and various other factors that are believed to be reasonable under the circumstances.

Accounting for Goods and Services Tax (GST)

Income, expenses, and assets are recognised net of the amount of Goods and Services Tax (GST), except that the:

- a) amount of GST incurred by the Institute as a purchaser that is not recoverable from the Australian Taxation Office (ATO) is recognised as part of an asset's cost of acquisition or as part of an item of expense; and
- b) receivables and payables are stated with the amount of GST included.

Cash flows are included in the Statement of cash flows on a gross basis. However, the GST components of cash flows arising from investing and financing activities which are recoverable from, or payable to, the ATO are classified as operating cash flows.

Comparative Information

When the presentation or classification of items in the financial report is amended, comparative amounts are reclassified unless the reclassification is impracticable. Except when an AAS permits or requires otherwise, comparative information is presented in respect of the previous period for all amounts reported in the financial statements. AASB 1060 provides relief from presenting comparatives for:

- Property, Plant and Equipment reconciliations.



Financial Statements and Notes

Note 2. Use of our funding

Expenses incurred in the delivery of services

This section provides the additional information about how the Institute's funding is applied and the accounting policies that are relevant for an understanding of the items recognised in the financial statements. The primary expenses incurred by the Institute in achieving its objectives and the relevant notes are:

	Notes	2024 \$	2023 \$
Research grants		4,115,858	5,291,879
Scholarships and awards		208,937	299,655
Employee benefits expenses	2.1.1	1,565,128	1,259,564
Employee benefits provisions	2.1.2	239,321	170,426
Board and committee fees and costs	2.2	122,296	112,201
Other expenditure	2.3	583,158	623,024
Accommodation expenses		213,306	109,894

Research grants expense is recognised when the Institute becomes obliged to make payment to the grantee. The Institute becomes obliged to make payment when the grantee has met the conditions of the grant agreement.

Scholarships and awards expense represents the Institute's obligation to fund approved scholarships and costs associated with its various award programs.

Accommodation expense represents the Institute's rental expense.

2.1.1 Employee benefits expenses

	2024 \$	2023 \$
Wages and salaries	1,170,333	902,581
Executive Salaries ^(b)	234,568	227,770
Superannuation - defined contribution plans ^(a)	160,227	129,213
	1,565,128	1,259,564

(a) Defined contribution plans include West State Superannuation Scheme (WSS), Gold State Superannuation Scheme (GSS), Government Employees Superannuation Board Schemes (GESBs) and other eligible funds.

(b) Comparative figures have been reclassified to remove allowances from executive salaries.

Wages and salaries: Employee expenses include all costs related to employment including wages and salaries and leave entitlements.

Executive Salaries: Executive salaries include the base salary of the Institute's CEO.

Superannuation: The amount recognised in profit or loss of the Statement of Comprehensive Income comprises employer contributions paid to the GSS (concurrent contributions), the WSS Scheme, the GESBs or other superannuation funds.



Financial Statements and Notes

2.1.2 Employee related provisions

Provision is made for benefits accruing to employees in respect of wages and salaries, annual leave and long service leave for services rendered up to the reporting date and recorded as an expense during the period the services are delivered.

	2024	2023
	\$	\$
Current		
Annual leave ^(a)	94,568	81,243
Long service leave ^(b)	86,898	-
	181,466	81,243
Non-Current		
Long service leave ^(c)	57,855	89,183
	57,855	89,183
	239,321	170,426

(a) **Annual leave liabilities:** Classified as current as there is no unconditional right to defer settlement for at least 12 months after the reporting period.

The provision for annual leave is calculated at the present value of expected payments to be made in relation to services provided by employees up to the reporting date.

(b) **Long service leave liabilities:** Unconditional long service leave provisions are classified as **current** liabilities as the Institute does not have an unconditional right to defer settlement of the liability for at least 12 months after the end of the reporting period.

(c) Pre-conditional and conditional long service leave provisions are classified as **non-current** liabilities because the Institute has an unconditional right to defer the settlement of the liability until the employee has completed the requisite years of service.

The provision for long service leave is calculated at present value as the Institute does not expect to wholly settle the amounts within 12 months. The present value is measured taking into account the present value of expected future payments to be made in relation to services provided by employees up to the reporting date. These payments are estimated using the remuneration rate expected to apply at the time of settlement, and discounted using market yields at the end of the reporting period on national corporate bonds with terms to maturity that match, as closely as possible, the estimated future cash outflows.

Key sources of estimation uncertainty – long service leave

Key estimates and assumptions concerning the future are based on historical experience and various other factors that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities within the next financial year.

Several estimates and assumptions are used in calculating the Institute's long service leave provision. These include:

- Expected future salary rates
- Discount rates
- Employee retention rates; and
- Expected future payments

Changes in these estimations and assumptions may impact on the carrying amount of the long service leave provision. Any gain or loss following revaluation of the present value of long service leave liabilities is recognised as employee benefits expense.



Financial Statements and Notes

2.2 Board and committee fees and costs

	2024	2023
	\$	\$
Board of Directors' remuneration	94,951	80,024
Advisory Committee attendance fees	20,808	27,429
Board and Advisory Committee's expenses	6,537	4,748
	122,296	112,201

2.3 Other expenditure

	2024	2023
	\$	\$
Supplies and services		
Printing and stationery	15,650	8,438
Advertising	-	1,655
Communications	20,489	23,908
Business travel	5,874	24,327
Accounting services	119,123	119,859
Consultants	38,965	77,185
Legal services	12,185	25,862
Insurance	18,158	15,195
Events	165,693	164,484
Subscriptions	36,865	34,294
Other	30,802	34,228
Total supplies and services	463,804	529,435
Other expenses		
Audit fees	40,750	36,300
Loss allowance	-	-
Employee expenses	70,885	39,522
Workers Compensation	6,579	4,768
Office fit out	1,140	12,999
	119,354	93,589
Total other expenditure	583,158	623,024



Financial Statements and Notes

2.3 Other expenditure (continued)

Supplies and services: Supplies and services are recognised as an expense in the reporting period in which they are incurred.

Other expenses: Other expenditures generally represent the day-to-day running costs incurred in normal operations.

Employee expenses: Includes workers' compensation insurance. Superannuation contributions accrued as part of the provision for leave are employee benefits and are not included in employment on-costs.

Note 3. Our funding sources

How we obtain our funding

This section provides additional information about how the Institute obtains its funding and the relevant accounting policy notes that govern the recognition and measurement of this funding. The primary income received by the Institute and the relevant notes are:

	Notes	2024 \$	2023 \$
Income from State Government	3.1	7,848,216	7,025,034

3.1 Income from State Government

	2024 \$	2023 \$
State Government Grants	7,631,000	6,915,000
	7,631,000	6,915,000

Services received free of charge from other State Government agencies during the period:

	2024 \$	2023 \$
Department of Energy, Mines, Industry Regulation and Safety	213,306	109,894
State Solicitors Office	3,910	140
	217,216	110,034
	7,848,216	7,025,034

State Government Grant: Revenue is recognised at fair value when MRIWA obtains control over the assets comprising the contributions, usually when cash is received.



Financial Statements and Notes

3.1 Income from State Government (continued)

Resources received free of charge or for nominal cost: Resources received free of charge or for nominal cost that MRIWA would otherwise purchase if not donated, are recognised as income at fair value where they can be reliably measured. A corresponding expense is recognised for services received. Receipts of assets are recognised in the Statement of Financial Position.

Resources received from other State Government agencies are separately disclosed under Income from State Government in the Statement of Comprehensive Income.

3.2 Income from Industry Sponsorship

	2024	2023
	\$	\$
Sponsorship income	925,108	1,751,225

Income from Industry Sponsorship: MRIWA provides a service to sponsors by administering sponsorship funds for research projects and conferences. These services are completed under a contractual arrangement. Income from sponsors is recognised at the point in time MRIWA has completed this service.

3.3 Other Revenue

	2024	2023
	\$	\$
Misc. Revenue	56,331	62,733
Conference Sponsorship	57,500	102,550
Event Ticket Sales	75,577	101,025
	189,408	266,308

Misc. Revenue: Includes sitting fees donated by Board and advisory committee members.



Financial Statements and Notes

Note 4. Key assets

This section includes information regarding the key assets the Institute utilises to gain economic benefit or provide service potential. The section sets out both the key accounting policies and financial information about the performance of those assets.

	Notes	2024 \$	2023 \$
Office equipment	4.1	12,723	-

4.1 Office Equipment

	2024 \$	2023 \$
Office equipment		
At cost	13,000	-
Accumulated depreciation	(277)	-
	12,723	-
Office equipment		
Carrying amount at start of period	-	-
Additions	13,000	-
Depreciation	(277)	-
Carrying amount at end of period	12,723	-

Initial recognition: Items of property, plant and equipment, costing \$5,000 or more are measured initially at cost. Where an asset is acquired for no cost or nominal cost, the cost is valued at its fair value at the date of acquisition. Items of office equipment costing less than \$5,000 are immediately expensed direct to the Statement of Comprehensive Income (other than where they form part of a group of similar items which are significant in total).

Subsequent measurement: All office equipment is stated at historical cost less accumulated depreciation and accumulated impairment losses.

Useful lives: All non-current assets having a limited useful life are systematically depreciated over their estimated useful lives in a manner that reflects the consumption of their future economic benefits.

Depreciation is calculated on straight-line basis, at rates that allocate the asset's value, less any estimated residual value, over its estimated useful life. The expected useful life for office equipment is 3 to 7 years.

The estimated useful lives, residual values and depreciation method are reviewed at the end of each annual reporting period, and adjustments are made where appropriate.

Impairment: There were no indications of impairment to office equipment at 30 June 2024. MRIWA held no goodwill or intangible assets with an indefinite useful life during the reporting period.

Non-financial assets are tested for impairment whenever there is an indication that the asset may be impaired. Where there is an indication of impairment, the recoverable amount is estimated. Where the recoverable amount is less than the carrying amount, the asset is considered impaired and is written down to the recoverable amount and an impairment loss is recognised.



Financial Statements and Notes

Note 5. Other assets and liabilities

This section sets out those assets and liabilities that arose from the Institute's controlled operations and includes other assets utilised for economic benefits and liabilities incurred during normal operations:

	Notes	2024 \$	2023 \$
Receivables	5.1	685,730	489,901
Other current assets	5.2	237,050	179,752
Payables	5.3	392,597	77,445
Deferred income	5.4	2,844,957	2,275,266

5.1 Receivables

	2024 \$	2023 \$
<u>Current</u>		
Grant Receivables - Sponsorship	510,815	176,000
Allowance for impairment of trade receivables	-	-
	510,815	176,000
GST receivable	174,915	313,901
	685,730	489,901

Trade receivables are recognised at original invoice amount less an allowance for any uncollectible amounts (i.e. expected credit loss). The collectability of receivables is reviewed on an ongoing basis and any receivables identified as uncollectible are written off against the allowance account. In the current year no expected credit loss was recognised. The carrying amount is equivalent to fair value as it is due for settlement within 30 days.

5.2 Other current assets

	2024 \$	2023 \$
Interest Receivable	206,893	138,411
Prepayments	30,157	41,341
	237,050	179,752

Revenue is recognised as the interest accrues.

5.3 Payables

	2024 \$	2023 \$
<u>Current</u>		
Accrued general expenses	357,752	57,123
Accrued salaries	34,845	20,322
	392,597	77,445

All Payables are recognised when MRIWA becomes obliged to make future payments as a result of a purchase of assets or services. The carrying amount is equivalent to fair value, as they are generally settled within 30 days.

Accrued salaries represent the amount due to staff but unpaid at the end of the financial year. Accrued salaries are settled within a fortnight of the financial year end.

Accrued General expenses represent the amounts due to researchers and suppliers but unpaid at the end of the financial year. These payments are settled within 30 days of the financial year end. MRIWA considers the carrying amount of accrued expenses to be equivalent to its fair value.



Financial Statements and Notes

5.4 Deferred Income

	2024	2023
	\$	\$
Deferred Income - Sponsorship	2,844,957	2,275,266
	2,844,957	2,275,266

Deferred Income is recognised when the sponsorship funds are received or receivable and the Institute has not fulfilled its obligations under the terms of the sponsorship agreement. Refer to Note 3.2.

Note 6. Financing

This section sets out the material balances and disclosures associated with the financing and cash flows of the Institute.

	Notes	2024	2023
		\$	\$
Cash and cash equivalents	6.1.1	11,619,509	7,225,344
Restricted cash and cash equivalents	6.1.2	8,091,798	8,835,922
Commitments	6.2	10,283,279	10,979,346

6.1 Cash and cash equivalents

6.1.1 Reconciliation of cash

	2024	2023
	\$	\$
Cash and cash equivalents	11,619,509	7,225,344
Restricted cash and cash equivalents - current	8,091,798	8,835,922
	19,711,307	16,061,266

For the purpose of the Statement of Cash Flows, cash and cash equivalents (and restricted cash and cash equivalents) assets comprise cash on hand and short-term deposits with original maturities of three months or less that are readily convertible to a known amount of cash, and which are subject to insignificant risk of changes in value.



Financial Statements and Notes

6.1.2 Restricted cash and cash equivalents

	2024	2023
	\$	\$
Research grants	7,461,417	8,383,360
Scholarships	630,381	452,562
	8,091,798	8,835,922

Cash held in the account is to be used only for the purpose of providing grants for research and development of projects to grantees.

6.2 Commitments

	2024	2023
	\$	\$
Other expenditure commitments		
Within 1 year	7,816,611	7,192,483
Later than 1 year and not later than 5 years	2,153,168	3,302,363
Later than 5 years	313,500	484,500
	10,283,279	10,979,346

The total presented for other expenditure commitments are GST exclusive.

The total commitments reported above represent only projects with completed contractual liabilities in place. MRIWA has committed additional monies to research projects during this period. The contracts for these projects are still to be finalised. These monies have not been included in the amounts reflected above.



Financial Statements and Notes

Note 7. Financial instruments and contingencies

This note sets out the financial instruments and contingencies of the Institute.

	Notes
Financial Instruments	7.1
Contingent Liabilities and Assets	7.2

7.1 Financial instruments

The carrying amounts of each of the following categories of financial assets and financial liabilities at the end of the reporting period are:

	2024 \$	2023 \$
Financial assets		
Cash and cash equivalents	11,619,509	7,225,344
Restricted cash and cash equivalents	8,091,798	8,835,922
Receivables ^(a)	510,815	176,000
Other current assets	237,050	179,752
Total financial assets	20,459,172	16,417,018
Financial liabilities		
Payables	357,752	57,123
Total financial liability	357,752	57,123

(a) The amount of receivables/financial assets at amortised cost excludes GST recoverable from the ATO (statutory receivable).

7.2 Contingent assets and liabilities

MRIWA has no contingent liabilities or contingent assets.



Financial Statements and Notes

Note 8. Other disclosures

This section includes additional material disclosures required by accounting standards or other pronouncements, for the understanding of this financial report.

	Notes
Events occurring after the end of the reporting period	8.1
Changes in Accounting Policy	8.2
Key management personnel	8.3
Related party transactions	8.4
Related bodies	8.5
Affiliated bodies	8.6
Remuneration of auditors	8.7
Equity	8.8
Supplementary financial information	8.9
Explanatory statement	8.10

8.1 Events occurring after the end of the reporting period

MRIWA has had no events occurring after the end of the reporting period.

8.2 Changes in Accounting Policy

There have been no changes to accounting policies during the financial year.

After assessing all new or amended standards issued but not yet effective, the Institute has determined that none of those issued standards impact future reported results.

8.3 Key management personnel

The Institute has determined key management personnel including the responsible Minister, board members, and senior officers of the Institute.

The Institute does not incur expenditures to compensate Ministers and those disclosures may be found in the *Annual Report on State Finances*.

The total fees, salaries, superannuation, non-monetary benefits, and other benefits for key management personnel of the Institute for the reporting period are presented within the following bands:

	2024	2023
Compensation band (\$)		
0 – 50,000	7	8
150,001 – 200,000	1	-
250,001 – 300,000	1	1

	2024	2023
	\$	\$
Total compensation of senior officers	597,574	383,964

Total compensation includes the superannuation expense incurred by the Institute in respect of key management personnel.



Financial Statements and Notes

8.4 Related party transactions

The Institute is a wholly owned and controlled entity of the State of Western Australia. In conducting its activities, the Institute is required to pay various taxes and levies based on the standard terms and conditions that apply to all tax and levy payers to the State and entities related to State.

Related parties of the Institute include:

- all Cabinet Ministers and their close family members, and their controlled or jointly controlled entities;
- all senior officers and their close family members, and their controlled or jointly controlled entities;
- the Government Employees Superannuation Board (GESB);
- other departments and public sector entities, including related bodies included in the whole of government, consolidated financial statements; and
- associates and joint ventures that are included in the whole of government consolidated financial statements.

Significant transactions with related parties throughout the year ended 30 June 2024 include:

- Department of Mines, Industry Regulation and Safety (GSWA)
 - Funds received as sponsor contribution to research projects (included within Sponsorship income) (\$158,333)
- Department Of Energy, Mines, Industry, Regulation and Safety (DEMIRS)
 - Appropriations (refer note 3.1)
 - Accommodation received free of charge (included in Accommodation Expense and Resources Received Free of Charge (refer note 3.1)
 - Funds received as compensation for the transfer of leave entitlements from DEMIRS to MRIWA (\$17,718)
 - Funds paid as compensation for the transfer of leave entitlements from MRIWA to DEMIRS (\$6,794)

- Department of Jobs, Tourism, Science, and Innovation
 - Funds received under a Letter of Agreement to support the development of a business case and marketing plan for a large-scale energy and resources-related week in Western Australia (\$300,000)
 - Funds received as compensation for the transfer of annual leave entitlements from JTSI to MRIWA (\$12,440)
 - Funds received under a Memorandum of Understanding for allocation to the Future Battery Industries Cooperative Research Centre (FBI CRC) (\$15,000)
 - Funds received under a Memorandum of Understanding for allocation to the Heavy Industry Low-carbon Transition Cooperative Research Centre (HILT CRC) (\$177,000)
 - Funds received as sponsor contribution to research projects (included within Sponsorship Income) (\$300,000)
- Department of Finance
 - Western Australian payroll tax paid for the FY22/23 period (\$20,143)
- Office of the Auditor General
 - Audit fees in relation to the FY22/23 audit (\$40,750)
- State Solicitor's Office
 - Provided legal services to MRIWA throughout the year (\$10,000)
- Department of Premier and Cabinet
 - Funds received as compensation for the transfer of leave entitlements from DEMIRS to MRIWA (\$3,951)

8.5 Related bodies

The Institute has no related bodies.

8.6 Affiliated bodies

The Institute has no affiliated bodies.



Financial Statements and Notes

8.7 Remuneration of auditors

Remuneration paid or payable to the Auditor General in respect of the audit for the current financial year is as follows:

	2024	2023
	\$	\$
Auditing the accounts, financial statements and key performance indicators	40,750	40,750

8.8 Equity

The Western Australian Government holds the equity interest in MRIWA on behalf of the community. Equity represents the residual interest in the net assets of MRIWA.

	2024	2023
	\$	\$
Accumulated surplus		
Balance at start of period	14,207,782	12,383,576
Result for the period	2,962,153	1,824,206
Balance at end of period	17,169,935	14,207,782
Total Equity at end of period	17,169,935	14,207,782

8.9 Supplementary financial information

(a) Write-offs

	2024	2023
	\$	\$
Public property written-off by the Authority during the period	-	-

(b) There were no losses through theft, defaults and other causes.

(c) No gifts of public property were provided by the Institute.



Financial Statements and Notes

8.10 Explanatory statement

This explanatory section explains variations in the financial performance of the Institute undertaking transactions under its own control, as represented by the primary financial statements. All variances between annual estimates (original budget) and actual results for 2024, and between the actual results for 2024 and 2023 are shown below. Narratives are provided for major variances that are more than 10% of the comparative and that are more than 1% of the following:

- 1) Estimate and actual results for the current year:
 - Total Cost of Services of the annual estimates for the Statement of comprehensive income and Statement of cash flows, and
 - Total Assets of the annual estimates for the Statement of financial position
- 2) Actual results between the current year and the previous year:
 - Total Cost of Services of the previous year for the Statements of comprehensive income and Statement of cash flows; and
 - Total Assets of the previous year for the Statement of financial position

Statement of Comprehensive Income

	Variance note	Estimate ¹ 2024 \$	Actual 2024 \$	Actual 2023 \$	Variance between actual and estimate \$	Variance between actual results for 2024 and 2023 \$
COST OF SERVICES						
Expenses						
Research grants	1,A	11,250,629	4,115,858	5,291,879	(7,134,771)	(1,176,021)
Scholarships and awards	2,B	486,904	208,937	299,655	(277,967)	(90,718)
Employee benefits expense	3,C	2,008,408	1,565,128	1,259,564	(443,280)	305,564
Institute Contractor fees		52,000	-	-	(52,000)	-
Board and committee fees and costs		148,633	122,296	112,201	(26,337)	10,095
Supplies and services	4	1,135,815	463,804	529,435	(672,011)	(65,631)
Other expenses		139,243	119,354	93,589	(19,889)	25,765
Accommodation expense	D	152,086	213,306	109,894	61,220	103,412
Depreciation Expense		-	277	-	277	277
Total cost of services		15,373,718	6,808,960	7,696,217	(8,564,758)	(887,257)



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Comprehensive Income (continued)

	Variance note	Estimate ¹ 2024 \$	Actual 2024 \$	Actual 2023 \$	Variance between actual and estimate \$	Variance between actual results for 2024 and 2023 \$
Income						
Revenue						
Interest revenue	5,E	166,972	808,381	477,856	641,409	330,525
Other revenue	6,F	397,404	189,408	266,308	(207,996)	(76,900)
Revenue from Sponsorship	7,G	1,236,826	925,108	1,751,225	(311,718)	(826,117)
Total Revenue		1,801,202	1,922,897	2,495,389	121,695	(572,492)
Total income other than income from State Government		1,801,202	1,922,897	2,495,389	121,695	(572,492)
NET COST OF SERVICES						
		13,572,516	4,886,063	5,200,828	(8,686,453)	(314,765)
Income from State Government						
State Government Grant	H	6,946,000	7,631,000	6,915,000	685,000	716,000
Resources received free of charge	I	152,086	217,216	110,034	65,130	107,182
Total income from State Government		7,098,086	7,848,216	7,025,034	750,130	823,182
SURPLUS/(DEFICIT) FOR THE PERIOD		(6,474,430)	2,962,153	1,824,206	9,436,583	1,137,947
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD		(6,474,430)	2,962,153	1,824,206	9,436,583	1,137,947

1. These estimates are published in the Annual Report for the year ended 30 June 2023.



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Comprehensive Income (continued)

Major Estimate and Actual (2024) Variance Narratives

1. Research grants are below estimate for several reasons:
 - The research grants were of lower value than expected;
 - Funds managed by MRIWA on behalf of sponsors were lower than expected;
 - The time required to negotiate the condition of the grant for a project with the sponsors and research partners was longer than expected; and
 - Progress by the researchers in executing the project and the timeliness of researchers' submission of their progress reports and financial statements in order to receive the next claim was slower than expected.

Payments to researchers will differ from year to year based on the progress of the research.

2. Scholarship expense is less than originally budgeted as a result of them only being offered as a 'top-up' scholarship and delays invoicing by the host universities.
3. Employee Benefits expenses are lower than budgeted due to recruitment of budgeted personnel not proceeding, and some vacancies remained in the organisation.
4. Supplies and services are lower than budgeted. This is because consultant fees have not been incurred as planned work did not proceed in the period and conference expenses were lower than expected due to lower attendance and not incurring speaker fees.
5. Interest Revenue is more than budgeted due to increases in interest rates.
6. Other Revenue, for example event ticket sales from the net zero mining conference are lower than budgeted.
7. Revenue from sponsorship is below estimate as it is difficult to forecast an accurate value of industry sponsorship income for new research projects. Revenue from industry sponsorship is also impacted by decisions of sponsors to pay funds direct

to researchers, rather than MRIWA, for projects forecast to be approved throughout the financial year.

Major Actual (2024) and Comparative (2023) Variance Narratives

- A. Research grants has decreased from the prior year as less projects progressed in their research during this financial year, resulting in less researcher payments being made.
- B. Scholarships and awards have decreased from the prior year as a result of them only being offered as a 'top-up' scholarship and delays invoicing by the host universities.
- C. The Employee benefits expense has increased from the prior year due to the increase in number of employees.
- D. Accommodation expense has increased from the prior year due to increase in rent and inclusion of other resources such as car parking not previously included.
- E. Interest Revenue increased from prior year due to increases in interest rates.
- F. Other Revenue has decreased due to lower event sales compared to prior years and reduced conference sponsorships in relation to the event.
- G. Revenue from sponsorship is driven by the terms set in the Conditions of Grant at the commencement of every new research project. The decrease in income reflects the reduced level of sponsorship funds to be managed by MRIWA in accordance with the Conditions of Grants entered into.
- H. Net cash provided by the State Government has increased from prior year due to the mid-year budget allocation for the continuation of the green iron pilot plant project.
- I. Resources received free of charge increased from the prior year as there are additional resources in the calculation of the rental expense.



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Financial Position

	Variance note	Estimate ¹ 2024 \$	Actual 2024 \$	Actual 2023 \$	Variance between actual and estimate \$	Variance between actual results for 2024 and 2023 \$
ASSETS						
Current Assets						
Cash and cash equivalents		2,100,645	11,619,509	7,225,344	9,518,864	4,394,165
Restricted cash and cash equivalents		8,402,582	8,091,798	8,835,922	(310,784)	(744,124)
Receivables and other assets		570,474	685,730	489,901	115,256	195,829
Other current assets	1	41,743	237,050	179,752	195,307	57,298
Total Current Assets		11,115,444	20,634,087	16,730,919	9,518,643	3,903,168
Non-Current Assets						
Office equipment		-	12,723	-	12,723	12,723
Total Non-Current Assets		-	12,723	-	12,723	12,723
TOTAL ASSETS		11,115,444	20,646,810	16,730,919	9,531,366	3,915,891



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Financial Position (continued)

	Variance note	Estimate ¹ 2024 \$	Actual 2024 \$	Actual 2023 \$	Variance between actual and estimate \$	Variance between actual results for 2024 and 2023 \$
LIABILITIES						
Current Liabilities						
Payables		48,955	392,597	77,445	343,642	315,152
Provisions		173,500	181,466	81,243	7,966	100,223
Deferred income	2, A	2,496,286	2,844,957	2,275,266	348,671	569,691
Total Current Liabilities		2,718,741	3,419,020	2,433,954	700,279	985,066
Non-Current Liabilities						
Provisions		49,000	57,855	89,183	8,855	(31,328)
Total Non-Current Liabilities		49,000	57,855	89,183	8,855	(31,328)
TOTAL LIABILITIES		2,767,741	3,476,875	2,523,137	709,134	953,738
NET ASSETS		8,347,703	17,169,935	14,207,782	8,822,232	2,962,153
EQUITY						
Accumulated surplus		8,347,703	17,169,935	14,207,782	8,822,232	2,962,153
TOTAL EQUITY		8,347,703	17,169,935	14,207,782	8,822,232	2,962,153

1. These estimates are published in the Annual Report for the year ended 30 June 2023.



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Financial Position (continued)

Major Estimate and Actual (2024) Variance Narratives

1. Other current assets are higher than estimated due to an increase in interest rates.
2. Deferred income is lower than the estimate as projects approved by the Board in 2023-24 had reduced level of sponsorship funds to be managed by MRIWA. The income received from sponsors and whether this is paid direct to researchers or MRIWA, has a direct relationship to the deferred revenue calculated.

Major Actual (2024) and Comparative (2023) Variance Narratives

- A. Deferred income has increased from the prior year. Although projects approved by the Board in 2023-24 had reduced level of sponsorship funds to be managed by MRIWA there has been an increase in the balance due to new projects approved during the year and milestones that are yet to be met on existing projects.



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Cash Flows

	Variance note	Estimate ¹ 2024 \$	Actual 2024 \$	Actual 2023 \$	Variance between actual and estimate \$	Variance between actual results for 2024 and 2023 \$
CASH FLOWS FROM STATE GOVERNMENT						
State Government Grant						
Net cash provided by State Government	A	6,946,000	7,631,000	6,915,000	685,000	716,000
		6,946,000	7,631,000	6,915,000	685,000	716,000
Utilised as follows:						
CASH FLOWS FROM OPERATING ACTIVITIES						
Payments						
Research Grant Payments and Scholarship	1,B	(11,738,578)	(4,055,334)	(5,591,534)	7,683,244	1,536,200
Employee benefits	2,C	(1,975,408)	(1,481,710)	(1,263,045)	493,698	(218,665)
Institute Contractor fees		(52,000)	-	-	52,000	-
Board and Advisory committee fees	3	(148,633)	(65,965)	(49,468)	82,668	(16,497)
Supplies and Services	4	(1,427,144)	(536,895)	(622,422)	890,249	85,527
GST payments on purchases	5,D	(1,189,595)	(436,976)	(596,872)	752,619	159,896



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Cash Flows (continued)

	Variance note	Estimate ¹ 2024 \$	Actual 2024 \$	Actual 2023 \$	Variance between actual and estimate \$	Variance between actual results for 2024 and 2023 \$
Receipts						
Receipts from Sponsors	6,E	1,433,901	1,089,390	720,109	(344,511)	369,281
Receipts from events	7,F	397,404	155,577	236,075	(241,827)	(80,498)
Interest received	8,G	166,972	739,899	377,086	572,927	362,813
GST receipts on sales	9,H	100,373	208,225	112,265	107,852	95,960
GST receipts from taxation authority	10,I	1,089,222	415,830	569,989	(673,392)	(154,159)
Net cash used in operating activities		(13,343,486)	(3,967,959)	(6,107,817)	9,375,527	2,139,858
CASH FLOWS FROM INVESTING ACTIVITIES						
Payments						
Purchase of non-current assets		-	(13,000)	-	(13,000)	(13,000)
Net cash used in investing activities		-	(13,000)	-	(13,000)	(13,000)
Net increase/(decrease) in cash and cash equivalents		(6,397,486)	3,650,041	807,183	10,047,527	2,842,858
Cash and cash equivalents at the beginning of the period		16,900,713	16,061,266	15,254,083	(839,447)	807,183
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD		10,503,227	19,711,307	16,061,266	9,208,080	3,650,041

1. These estimates are published in the Annual Report for the year ended 30 June 2023.



Financial Statements and Notes

8.10 Explanatory statement (continued)

Statement of Cash Flows (continued)

Major Estimate and Actual (2024) Variance Narratives

1. Research grants are below estimate for several reasons:
 - The research grants were of lower value than expected;
 - Funds managed by MRIWA on behalf of sponsors were lower than expected;
 - The time required to negotiate the condition of the grant for a project with the sponsors and research partners was longer than expected; and
 - Progress by the researchers in executing the project and the timeliness of researchers' submission of their progress reports and financial statements in order to receive the next claim was slower than expected.

Payments to researchers will differ from year to year based on the progress of the research.

2. Employee benefits are lower than budgeted due to recruitment of budgeted personnel not proceeding, and some vacancies remained in the organisation.
3. Board and advisory fees are lower than budgeted due to lower than expected Grant Assessment Panel attendance.
4. Supplies and services are lower than budgeted. This is because consultant fees have not been incurred as planned work did not proceed in the period and conference expenses were lower than expected due to lower attendance and not incurring speaker fees.
5. GST payments on purchases are lower than budgeted due to expenditure being lower than budgeted.
6. Revenue from sponsorship is below estimates as it is difficult to forecast an accurate value of industry sponsorship income for new research projects. Revenue from industry sponsorship is also impacted by decisions of sponsors to pay funds direct to researchers, rather than MRIWA, for projects forecast to be approved throughout the financial year.

7. Receipts from events are below estimates due to event ticket sales from the net zero mining conference being lower than budgeted.
8. Interest received are higher than estimate due to an increase in interest rates.
9. GST Received is higher than estimated due to higher than estimated taxable sales.
10. GST Receipts from taxation authority is lower than estimate due to lower GST on purchases.

Major Actual (2024) and Comparative (2023) Variance Narratives

- A. Net cash provided by the State Government has increased from prior year due to the mid-year budget allocation for the continuation of the green iron pilot plant project.
- B. Research grants have decreased from the prior year as less projects progressed in their research during this financial year, resulting in less researcher payments being made.
- C. Employee benefits have increased due to an increase in the workforce.
- D. GST payments on purchases have decreased due to decrease in expenditure.
- E. Receipts from sponsors are driven by the terms set in the Conditions of Grant at the commencement of every new research project. The increase in receipts reflects the increased level of sponsorship funds to be managed by MRIWA in accordance with the Conditions of Grants entered into.
- F. Receipts from events has decreased due to conference sponsorship and event ticket sales reducing from the prior year.
- G. Interest received has increased due to an increase in interest rates.
- H. GST receipts on sales has increased from the prior year due to increase in taxable sales.
- I. GST Receipts from taxation authority has decreased compared to the prior year due to a reduction in taxable expenditure.



Our Governance

MRIWA's robust governance and contemporary fit-for-purpose corporate practices are outlined in this section highlighting some of the mechanisms in place to improve our performance, deliver business outcomes and ensure compliance.

Message from the Audit and Risk Committee Chair

Throughout the 2023-2024 financial year, the Audit and Risk Committee (ARC) continued providing oversight to governance, risk, audit, and the financial matters of MRIWA.

The strong internal audit and risk practices by the MRIWA team in the last financial year resulted in MRIWA once again being listed by the Office of Auditor General as one of the small government organisations having positively completed a 2023FY audit with best practice performance.

With the ever-increasing risk of cyber fraud and breaches, the ARC continued its strong focus on cybersecurity and related IT issues. This included undertaking penetration testing, ongoing vulnerability assessments, and ensuring the organisation was covered by security operations centre-security information and event management monitoring. MRIWA retains an Essential 8 Level 1 standard for all of its IT systems. Monitoring of MRIWA's cybersecurity systems continues to be assessed on an ongoing basis.

Following an extensive review of MRIWA's Intellectual Property (IP) practices in the previous year, work was ongoing this financial year to implement the new IP procedures across the practices of the organisation.

Internal audits were undertaken on the scholarship contract agreements and against contract agreements

and grant management processes set within the organisation's internal management software program.

Other ongoing work during the financial year included continuous improvement of the organisation's: Financial management practices; Internal Audit and Reporting Plan; and Business continuity planning.

The Public Sector Commissioner issued a new Public Sector Code of Ethics centred around four core standards of integrity, impartiality, respect for others, and trust and accountability, as well as a new Commissioner's Instruction 40 on Ethical Foundations.

In response to the new Code of Ethics and Commissioner's Instruction, MRIWA developed and approved a new Integrity Framework. The Integrity Framework sets out MRIWA's expectations and commitments in relation to what is required to operate with the highest level of integrity and accountability, and details MRIWA's approach to integrity.

MRIWA's Financial Management Manual, Risk Appetite and Register were reviewed and updated. The ARC continues to consider ongoing emerging environmental, social and governance (ESG) risks to the organisation at each committee meeting and incorporates identified risks to MRIWA into the Risk Register as required.

Finally, I extend my appreciation to both Larry Lopez and Rylee Campbell for their continued attentive focus on governance, financial, and risk matters.

Importantly, implementation of the operational aspects of the ARC outcomes and audit findings continued with the support of Nicole Roocke and Stephanie Ahlfeld and our financial management services provider Deloitte.

Linda Tompkins
Chair
Audit and Risk Committee



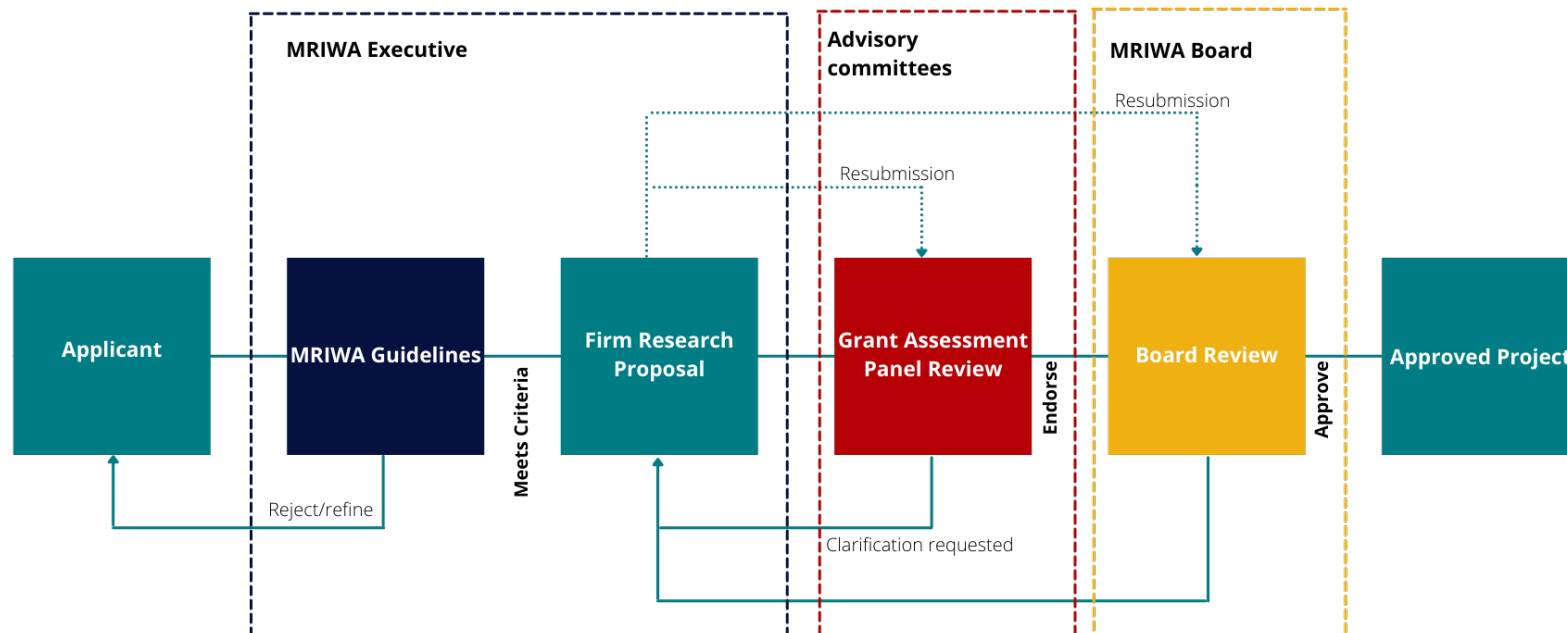
Committee Structure and Decision-Making Framework

Control and management of MRIWA is vested in a Board of seven members (MRIWA Board), who are appointed by the Minister. The CEO administers day-to-day operations, subject to the direction of the MRIWA Board.

The MRIWA College is an advisory group appointed by the MRIWA Board to provide advice to MRIWA and the MRIWA Board on minerals research priorities. The MRIWA College assists in the assessment of research grant applications which seek to address the challenges facing the State's minerals industry to ensure it can deliver an economic and social benefit for Western Australia.

The MRIWA College is comprised of individual representatives with specific knowledge and experience relevant to one or more of the program areas in the MRIWA Research Priority Plan¹. These representatives are drawn from a range of industry, research community and government organisations.

Research applications are developed by an Applicant with input from MRIWA, before being reviewed by a Grant Assessment Panel (GAP). Members of the GAP are drawn from the MRIWA College. The GAP make a recommendation to the MRIWA Board on each project. It is the role of the MRIWA Board to approve investment decisions for all projects.



1. <https://www.mriwa.wa.gov.au/research-funding/research-priorities/>



Disclosures

Shared Responsibilities with Other Agencies

The Institute did not share any responsibilities with other agencies in 2023-24.

Ministerial Directives

There have been no Ministerial directives to MRIWA in 2023-24.

Other Financial Disclosures

Capital Works

MRIWA has no capital works projects.

Employment and Industrial Relations

As of 30 June 2024, MRIWA employed eight people, with three vacant roles, equating to 11 full-time equivalents (FTE).

During the year, three people ceased employment with MRIWA.

MRIWA employment profile

Employment Type	2024	2023
Permanent Full-Time	3	3
Fixed Term Full-Time	5	4
Fixed Term Part-Time	0	1

Staff Development

MRIWA is committed to supporting its employees through the provision of training and development opportunities.

In 2023-24, MRIWA participated in the Public Sector Commission's Women in Executive Leadership Development Experience Initiative, temporarily creating the Level 9 (non-SES) role of Director Research Strategy from 1 July 2023 – 30 June 2024.

Inclusiveness reporting

MRIWA is committed to a diverse and inclusive workplace.

Diversity Profile

Diversity Group	2024	2023
Gender		
Women on the Board	43%	50%
Women on the College ¹	39%	
Women in Senior Executive Services (SES)	100%	100%
Indigenous Australians		
Board	14%	17%
College ¹	0	
Employees	0	0
Culturally-Diverse Background²		
Board ¹	43%	
College ¹	76%	
Employees	12%	12%
Disabilities		
Board ¹	0	
College ¹	0	
Employees	0	0
Youth - under 25 years		
Board ¹	0	
College ¹	0	
Employees	0	12%

1. New data for 2024.

2. Cultural diversity core measures are defined by fluency in a language other than English, being born in a country other than Australia or self-identifying as culturally and linguistically diverse.



Occupational Safety & Health; Workers' Compensation and Injury Management

MRIWA is committed to providing a safe and healthy work environment. All employees participated in Workplace Culture: Discrimination, Harassment and Bullying training delivered by the Equal Opportunity Commission.

Measures	Results - Base year ^(a)	Results - Prior year	Results - Current reporting year	Targets
Number of fatalities	0	0	0	0
Lost time injury and disease incidence rate	0	0	0	0 or 10% reduction in incidence rate
Lost time injury severity rate	0	0	0	0 or 10% reduction in severity rate
Percentage of injured workers returned to work (i) within 13 weeks	n/a	n/a	n/a	100%
Percentage of injured workers returned to work (ii) within 26 weeks	n/a	n/a	n/a	Greater than or equal to 80%
Percentage of managers trained in work health and safety injury management responsibilities, including refresher training within 3 years	100%	100%	50%	Greater than or equal to 80%

(a) The performance reporting examines a three-year trend and, as such, the comparison base year is to be two years prior to the current reporting year.

MRIWA did not provide asbestos-related training to its employees. MRIWA does not carry out asbestos related activities.

Unauthorised use of credit cards

Officers of MRIWA hold corporate credit cards where their functions warrant usage of this facility.

No instances occurred where a Western Australian Government Purchasing Card was used for personal purposes during the period.

The number of referrals for disciplinary action instigated by the notifiable authority during the reporting period: **None**

Governance Disclosures

Advertising

In accordance with section 175ZE of the *Electoral Act 1907 (WA)*, MRIWA has incurred the following expenditure for advertising agencies, market research, polling, direct mail or media advertising agencies:

Expenditure	Amount (\$)	Total (\$)
Advertising agencies, Market research organisations, Polling organisations, Direct mail organisations	NIL	
Media advertising organisations		
- Initiative Media Australia (<i>Recruitment</i>)	215	
Grand total		215

Board and Committee Representation

To achieve its objective, MRIWA draws substantially on members of the minerals community contributing their experience and knowledge. This is particularly the case for the members of the MRIWA Board and supporting advisory committees.

MRIWA Board members are appointed in accordance with Section 27(1)(a) of the MRIWA Act and are remunerated by an annual fee set by the Public Sector Commissioner. The fee was increased in the period, effective from 18 September 2023.

Further information on MRIWA Board membership can be located in the *Overview* section of the Annual Report.

Under the MRIWA Act, the MRIWA Board has the authority to establish any committee or appoint any organisation or individual to provide it with advice, especially on the merit of applications for research grants (section 60).



From 17 February 2020, the advisory committee convened by MRIWA has taken the form of an assessment panel comprised of Core Members and subject matter experts drawn from the MRIWA College and known as a Grant Assessment Panel.

Members of MRIWA College are appointed in accordance with Section 60(1) of the MRIWA Act and are remunerated based on attendance at a rate set by the Public Sector Commissioner.

Five Grant Assessment Panels and two Scholarship Panels were convened in 2023-24. One further Scholarship Panel to consider applications for the DEMIRS Mental Awareness, Respect and Safety (MARS) Program was convened and was executed via correspondence.

College members were also involved in further consultation activities including:

- 2023 MRIWA College Colloquium
- Alternative Use of Tailings and Waste Inception Workshop
- Industry Round Table on: Common User Pilot Facility & Green Iron and Steel Initiatives in Western Australia
- Precision and Low Impact Mining Strategy Workshop

MRIWA College Colloquium

The 2023 MRIWA College Colloquium was held on 30 October 2023, with attending members asked to consider research 'impact' and opportunities for MRIWA's minerals research activities to deliver impact and benefit for Western Australia.

Facilitated by Joel Levin from Aha! Consulting, attendees were led through group discussions and activities to explore:

- What 'impact' means for the MRIWA research agenda
- Ways in which MRIWA can measure and deliver impact

The views surfaced through these workshop activities were captured and provided to MRIWA to support strategic forward planning for new and existing business activities.

Outcomes from the Colloquium will inform the 2024 MRIWA Impact Assessment, as well as supporting the Board and Executive as part of their strategic planning for 2024-2025.

The next MRIWA College Colloquium will be held on 11 November 2024.

College - Core Membership

Up to ten (10) persons will be appointed as Core Members of the College. At the expiry of their term as a Core Member, individuals may continue to participate in the College as a subject matter expert.

The number of meetings is not fixed and is variable year to year. Core Members are invited to:

- Attend all Grant Assessment Panel (GAP) meetings, to ensure a consistent approach in the assessment of research grant applications.
- Participate in consultation activities throughout the year. A summary of these is provided above.

Type of remuneration is based on attendance with differing rates for full or half day meetings.

Sitting fees rates are:

GAP Core Member Chairperson: \$1,046 per full day meeting over four hours
\$680 per half day meeting four hours or less

Core Members: \$680 per full day meeting over four hours
\$442 per half day meeting four hours or less

Where written assessments are required, remuneration is provided at a rate of \$85 per hour capped at a maximum of two hours per written assessment.

Position title	Last name	First Name	Appointment First Approved	Current Term Expiry	Actual remuneration 2023-24 \$
Chair	Lickfold	Vanessa	1/01/2021	31/12/2026	3,604 ^(a)
Deputy Chair	Kuhar	Laura	1/06/2020	31/05/2026	4,046 ^(a)
Core Member	Braund	Sara	1/09/2022	31/08/2025	612 ^(a)
Core Member	Trench	Allan	1/06/2020	31/05/2026	2,210 ^(a)
Core Member	Hough	Rob	1/06/2020	31/05/2026	-(b)
Core Member	Heyes	Joanne	1/06/2020	29/04/2024	2,890 ^(a)
Former Chair	Danckert	Gerard	1/06/2020	31/12/2023	1,360 ^(a)

(a) Foregoes all remuneration for use in the MRIWA Education Program.

(b) Ineligible for remuneration in accordance with Premier's Circular 2023/02 State Government Boards and Committees.



College Members

College members are invited to participate in MRIWA's activities as subject matter experts.

The number of meetings is not fixed and is variable year to year. College Members:

- May be invited to attend a Grant Assessment Panel (GAP) meeting subject to their area of expertise and the applications being considered.
- Are invited to participate in consultation activities throughout the year. A summary of these is provided above.

Type of remuneration is based on attendance with differing rates for full or half day meetings. Sitting fees rates are:

GAP Subject Matter Experts: \$680 per full day meeting over four hours
 \$442 per half day meeting four hours or less

College Members: \$680 per full day meeting over four hours
 \$442 per half day meeting four hours or less

Where written assessments are required, remuneration is provided at a rate of \$85 per hour capped at a maximum of two hours per written assessment.

Position title	Last name	First Name	Appointment First Approved	Current Term Expiry	Actual remuneration 2023-24 \$
Member	Baker	Christopher	1/06/2023	31/05/2026	0 ^(a)
Member	Bewick	Peter	1/06/2020	31/05/2026	442 ^(a)
Member	Brent	Allon	1/01/2021	31/12/2026	0 ^(a)
Member	Dell	John	1/06/2020	31/05/2026	2,006 ^(a)
Member	Elliott	Charles	20/06/2020	31/05/2026	755 ^(d)
Member	Fourie	Andy	1/06/2020	31/05/2026	442 ^(a)
Member	Fraser	Ryan	1/11/2023	31/10/2026	1,184 ^(b)
Member	Guj	Pietro	1/11/2020	31/10/2026	442 ^(a)
Member	Haslam McKenzie	Fiona	1/06/2020	31/05/2026	491 ^(d)
Member	Hebert	Nicolas	1/03/2023	28/02/2026	976 ^(b)

Position title	Last name	First Name	Appointment First Approved	Current Term Expiry	Actual remuneration 2023-24 \$
Member	Hodkiewicz	Melinda	1/09/2023	31/08/2026	884 ^(a)
Member	Hronsky	Jon	1/06/2020	31/05/2026	442 ^(a)
Member	Jessell	Mark	1/06/2020	31/05/2026	0 ^(a)
Member	Joubert	Anel	1/06/2020	31/05/2026	1,802 ^(a)
Member	Jung	James	1/12/2023	30/11/2026	884 ^(a)
Member	Kaksonen	Anna	1/06/2020	31/05/2026	- ^(c)
Member	Keegan	Michelle	1/06/2020	31/05/2026	442 ^(a)
Member	Kirkland	Chris	1/06/2020	31/05/2026	442 ^(a)
Member	Lamb	Andy	1/09/2020	31/08/2026	1,122 ^(a)
Member	Logan	Alexander	1/09/2020	31/08/2026	- ^(a)
Member	Maybee	Bryan	1/06/2020	31/05/2026	1,472 ^(b)
Member	McNab	Louise	1/09/2022	31/08/2025	850 ^(a)
Member	Morrison	Kylah	1/03/2024	28/02/2027	1,359 ^(d)
Member	Perring	Caroline	1/06/2020	31/05/2026	0 ^(a)
Member	Phegan	Eugenia	1/03/2023	28/02/2026	1,564 ^(a)
Member	Roberts	Ivor	1/06/2020	31/05/2026	- ^(c)
Member	Smith	Jeremy	1/06/2023	31/05/2026	491 ^(d)
Member	Staines	Russell	1/12/2022	30/11/2025	680 ^(a)
Member	Stimpfl	Marilena	1/09/2022	31/08/2025	0 ^(a)
Member	Suckling	Ian	1/01/2021	31/12/2026	442 ^(a)
Member	Topal	Erkan	22/06/2020	31/05/2026	0 ^(a)
Member	Viswanathan	Chitra	1/09/2020	31/08/2026	- ^(c)

- (a) Foregoes all remuneration for use in the MRIWA Education Program.
 (b) Foregoes a portion of remuneration for use in the MRIWA Education Program. Cash component includes superannuation paid.
 (c) Ineligible for remuneration in accordance with Premier's Circular 2023/02 State Government Boards and Committees.
 (d) Cash component includes superannuation paid.



Contracts with Senior Officers

No member of MRIWA staff had any interest or benefit from any contract entered by MRIWA.

Freedom of Information

The *Freedom of Information Act 1992* (WA) enables the public to apply for access to documents held by MRIWA. No freedom of information request was received by the organisation in 2023-24.

Public Sector Standards and Ethical Codes

All members of MRIWA Board and MRIWA College are aware of the need to comply with Part 4 – Administration, Subdivision 3 of the *Minerals Research Institute of Western Australia Act 2013* (WA), which sets out the provisions for disclosure of material personal interest, and MRIWA's Code of Conduct.

MRIWA has complied with Section 31(1) of the *Public Sector Management Act 1994* (WA) in the administration of the MRIWA's human resource management practices relating to Public Sector Standards, Western Australian Public Sector Code of Ethics and MRIWA's Code of Conduct.

MRIWA utilises the Department of Energy, Mines, Industry Regulation and Safety's human resources services and is confident their human resources management principles have adequate checks in place to ensure compliance requirements are met.

In 2023-24 no breach claims were lodged in relation to either the Public Sector Standards or the WA Public Sector Commission's Code of Ethics.

MRIWA is compliant with the *Public Interest Disclosure Act 2003* (WA). In accordance with this Act, the Chief Executive Officer is the designated Public Interest Disclosure Officer.

In 2023-24 no public interest disclosures were lodged under the Act. MRIWA submitted the 'Public Sector Entity Survey to the Public Sector Commission with no reports for breach of discipline under the *Public Sector Management Act 1994* (WA).

Quarterly reporting of MRIWA's gift and benefits register to the MRIWA Board continues to ensure no inappropriate acceptance of gifts or benefits and to monitor any notable trends.

WA Multicultural Policy Framework

The MRIWA Multicultural Plan 2021-24 was submitted in January 2021.

MRIWA is committed to all opportunities to expand knowledge about Aboriginal and Torres Strait Islander culture, history and experiences for our staff, board members and PhD student cohort.

MRIWA actively strived to identify ways where it can increase the engagement of Aboriginal and Torres Strait Islander people in the work done and ensure they are supported in doing so.

MRIWA believes in supporting and empowering mining industry thought leaders and research champions of the future. Introducing in FY22 the MRIWA Indigenous Postgraduate Research Scholarship, open to Aboriginal and Torres Strait Islander applicants only, to further enhance our multicultural engagement.

All MRIWA staff have completed the Public Sector Commission's Cultural Awareness training and Office of Multiculture Interest's Diverse WA training.

Throughout the year:

- MRIWA initiated its Lead Investigator series, celebrating the achievements of people from culturally diverse background who are recipients of MRIWA grant funding.
- Hosted 1 induction event and 2 networking events for participants in MRIWA's Education Program to facilitate the establishment of a peer network for new PhD recipients from overseas.
- Amended its ICT systems to enable the collection and reporting of cultural and linguistic data for MRIWA Board and College. This is included in the annual report for the first time.



Other Legal Requirements Annual Estimates^(a) Statement of Comprehensive Income

For financial year 2024-25

	Notes	Estimate 2025 \$
COST OF SERVICES		
Expenses		
Research grants	(b)	84,339,841
Scholarships and awards		575,010
Loss on disposal of assets		0
Employee benefits expense	(b)	2,409,930
Institute Contractor fees	(b)	7,557,000
Board and committee fees and costs		208,234
Supplies and services	(b)	9,554,888
Other expenses	(b)	209,449
Accommodation expenses		152,086
Depreciation expense		0
Total cost of services		105,006,438
Income		
Revenue		
Interest revenue		615,240
Other revenue		161,837
Revenue from Sponsorship	(b)	49,972,811
Total revenue		50,749,888
Total income other than income from State Government		50,749,888
NET COST OF SERVICES		54,256,550

	Notes	Estimate 2025 \$
Income from State Government		
State Government Grant	(b)	55,181,000
Resources received free of charge		152,086
Total income from State Government		55,333,086
Surplus/(Deficit) for the period		1,076,536
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD		1,076,536

Notes:

- (a) As MRIWA's Total Cost of Services has been less than \$10M in the two most recent comparative periods it is exempt from preparing Annual Estimates in accordance with Treasurer's Instruction 953 'Annual Estimates' and the Treasurer's Direction dated 16 March 2022.

As a matter of good practice, and given MRIWA is still required to disclose budgets for each financial year in the Annual Report in the form of:

- Statement of Comprehensive Income
- Statement of Financial Position
- Statement of Cash Flows,

annual estimates have been prepared for this future use.

- (b) Inclusive of funds committed by the State Government in the 2023-24 Budget Papers (\$200M over the forward estimates) to establish a Critical Minerals Advanced Processing (CMAP) Common User Facility. The State's contribution of \$100M is conditional upon the Commonwealth confirming its \$100M matching contribution to the CMAP.



Statement of Financial Position

For financial year 2024-25

	Estimate 2025 \$
ASSETS	
Current Assets	
Cash and cash equivalents	4,042,762
Restricted cash and cash equivalents	16,171,048
Receivables and other assets	489,901
Other Current Assets	153,810
Total Current Assets	20,857,521
Non-Current Assets	
Property, plant and equipment	10,400
Total Non-Current assets	10,400
TOTAL ASSETS	20,867,921

	Estimate 2025 \$
LIABILITIES	
Current Liabilities	
Payables	80,000
Provisions	76,785
Deferred revenue	2,155,754
Total Current Liabilities	2,312,539
Non-Current Liabilities	
Provisions	0
Total Non-Current Liabilities	0
TOTAL LIABILITIES	2,312,539
NET ASSETS	18,555,382
EQUITY	
Accumulated surplus	18,555,382
TOTAL EQUITY	18,555,382



Statement of Cash Flows

For financial year 2024-25

	Notes	Estimate 2025 \$
Cash flows from State Government		
Cash receipts from Government	(a)	55,181,000
Cash flows from operating activities		
Payments		
Research Grant & Scholarship Payments	(a)	(84,883,806)
Employee benefits	(a)	(2,555,645)
Institute Contractor Fees	(a)	(7,557,000)
Board and Advisory Committee Fees		(208,234)
Supplies and Services	(a)	(10,028,489)
GST Paid on Purchases	(a)	(9,222,237)
Other payments		
Receipts from Sponsors	(a)	50,053,384
Receipts from Events		161,837
Interest received		503,173
GST received on sales		146,522
Net GST refunded from ATO (or paid)		9,075,715
Cash generated from operations		(54,514,781)
Cash flows from investing activities		
Purchase of non-current assets		0
Net cash from investing activities		0

	Estimate 2025 \$
Cash flows from financing activities	
Related entities loans	0
Proceeds from other borrowings	0
HP Financing	0
Finance leases	0
Net cash from financing activities	0
Net increase in cash and cash equivalents	666,219
Cash and cash equivalents 1 July	19,547,591
CASH AND CASH EQUIVALENTS AT END OF YEAR	20,213,810

- (a) Inclusive of funds committed by the State Government in the 2023-24 Budget Papers (\$200M over the forward estimates) to establish a Critical Minerals Advanced Processing (CMAP) Common User Facility. The State's contribution of \$100 million is conditional upon the Commonwealth confirming its \$100M matching contribution to the CMAP.



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Our Performance

This section contains an overview of the MRIWA Performance Management Framework and the audited key performance indicators for 2023-24

Audited Key Performance Indicators

Certification of Key Performance Indicators

For the year ended 30 June 2024

We hereby certify the key performance indicators are based on proper records, are relevant and appropriate for assisting users to assess the Minerals Research Institute of Western Australia's performance, and fairly represent the performance of the Minerals Research Institute of Western Australia for the financial year ended 30 June 2024.

Changes to outcome-based management framework

The Agency's outcome-based management framework did not change during 2024.



Miriam Stanborough
Chairperson of the Board

Date: 19 August 2024



Linda Tompkins
Deputy Chairperson of the Board

Date: 19 August 2024



Key Effectiveness Indicator

Government Goal: Responsible financial management and better service delivery

Outcome 1: Fostering and promoting minerals research for the benefit of the State.

One measure of the effect of MRIWA research investments is to use minerals royalties accruing to Western Australia and the economic impact of that research more broadly. However, it is difficult to measure the direct impact resulting from minerals research due to the duration of the research projects; the many other factors influencing implementation; and the timeframe between creation of knowledge and generation of royalties.

For these reasons, the key indicator of effectiveness for MRIWA demonstrates the increased value of research enabled by leveraging funds from third parties on the State Government investment through MRIWA.

Key Effectiveness Indicator	2022-23 Actual	2023-24 Target	2023-24 Actual
Ratio of total cash value of research projects to total MRIWA cash investments in those research projects ^{(a) (b)}	5.11	4	5.53

Notes:

- (a) Investment totals are for projects with an executed contract and for completed projects, where completion date is within the reporting year.
- (b) Measure reported as a multiple.



Key Efficiency Indicator

Government Goal Responsible financial management and better service delivery

Service 1: Administer research grant applications and manage approved projects efficiently.

The primary service provided by MRIWA is to identify research opportunities and resources, support the development of Grant applications and to manage a portfolio of approved projects.

The administration effort required of MRIWA to do so is measured as a function of the total financial scale of the portfolio of research projects.

The key indicator of efficiency demonstrates the focus on maximising investment in research projects and a continued focus on minimising overheads from administration efforts.

Key Efficiency Indicator	2022-23 Actual	2023-24 Target	2023-24 Actual
Total administration cost for the year as a percentage of the total cash value of research projects and scholarships under management during the year.	2.08%	2.5%	2.51%

Notes:

(a) Total cash value is for projects and scholarships with an executed contract and for completed projects, where completion date is within the reporting year.

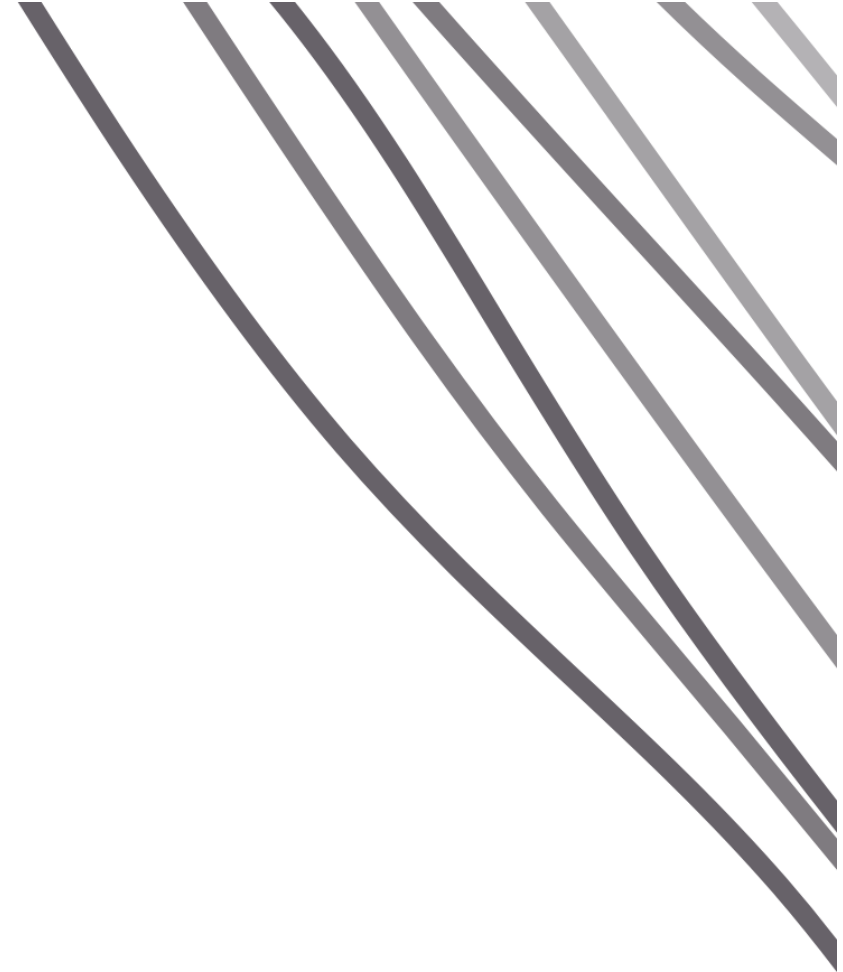
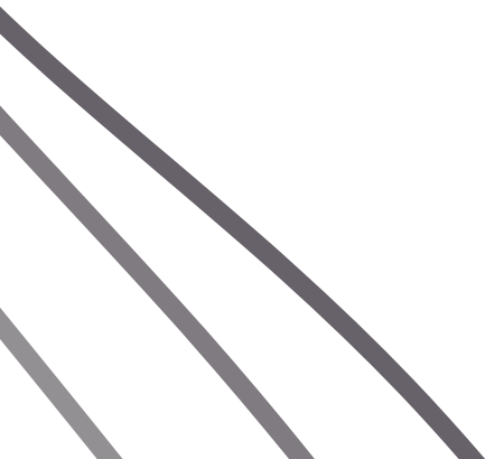




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Annexure: Information Statement



Information statement 2023-24

Introduction

Part 5 of the Freedom of Information Act 1992 (WA)¹ (the FOI Act) requires each agency publish an information statement and update the statement at intervals of not more than 12 months (sections 96 and 97 of the FOI Act).

The Minerals Research Institute of Western Australia (MRIWA) publishes its Information Statement as an annexure to the Annual Report. This Annexure supplements the detail provided in the Annual Report to ensure all information required under the FOI Act is publicly available.

Details of Legislation administered

Refer Annual Report – Overview > Legislation.

The *Minerals Research Institute of Western Australia Act 2013* (the Act) repealed the *Minerals and Energy Research Act 1987* thereby abolishing the Minerals and Energy Research Institute of Western Australia (MERIWA). All assets, rights and liabilities of MERIWA (the abolished Institute) were transferred to MRIWA on the commencement of the new Act.

Organisational Structure

Refer Annual Report – Overview > Responsible Minister.

The current organisation chart is available on the MRIWA website².

Decision-making framework

Refer Annual Report – Governance > Committee Structure and Decision-Making Framework.

¹ https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_353_homepage.html

² <https://www.mriwa.wa.gov.au/about-us/our-people/>

Agency functions

Refer Annual Report – Overview > About Us.

The Annual Report also includes independently audited financial statements and performance indicators and an overview of our performance in respect of governance requirements.

Details of functions, including decision-making functions, affecting the public

Except for those persons who are directly involved in assessing or undertaking the research projects, the general public is not involved in the day-to-day operations of the Institute.



Public participation in the formulation of policy and performance of agency functions

MRIWA regularly engages with representatives from industry, the research community and government organisations.

Details of the MRIWA College are provided in the Annual Report – Governance > Committee Structure and Decision-Making Framework. The Terms of Reference are available on the MRIWA website³.

As required by the *Minerals Research Institute of Western Australia Act 2013*, the Minister carried out a review of the operation and effectiveness of the Act following the fifth anniversary of the commencement of the Act. This review took place in 2018-19 and included a comprehensive stakeholder consultation process. The full report is available on the MRIWA website⁴.

The MRIWA Research Priority Plan identifies the key areas where investments will be made into high impact research and development. The 2019-20 review of the Research Priority Plan encompassed a broad range of preliminary stakeholder consultation which informed the development of a revised Plan. This was released for public consultation with all feedback considered by the Board prior to finalisation of the Plan.

Types of documents held by MRIWA

The MRIWA website⁵ contains a broad range of publicly accessible documents relating to our functions and activities. This includes:

- Annual reports;
- Policies and guidelines; and
- Final project reports.

MRIWA creates documents for the operation of business activities to carry out our functions and duties. This includes documents relating to:

- Accounting and finance
- Administrative operations
- Contracts, tenders and memorandums of understanding
- Governance and compliance
- Grant administration
- Human resources
- Ministerial correspondence and briefing notes
- Policy and procedure
- Records management
- Strategy and policy documents

Procedures for obtaining access to documents not publicly available

It is the aim of MRIWA to make information available promptly and at the least possible cost. Whenever possible, documents will be provided outside the FOI process.

If information is not routinely available, the FOI Act provides the right to apply for documents held by MRIWA and to enable the public to ensure that personal information in documents is accurate, complete, up to date and not misleading.

³ <https://www.mriwa.wa.gov.au/about-us/corporate-publications/corporate-governance/>

⁴ <https://www.mriwa.wa.gov.au/about-us/corporate-publications/mriwa-act/>

⁵ <https://www.mriwa.wa.gov.au/>



Freedom of information application process

Access applications have to:

- Be in writing;
- Give enough information so that the documents requested can be identified;
- Give an Australian address to which notices can be sent; and,
- Be lodged at the agency with any application fee payable.

Applications and enquiries should be addressed to the CEO (postal address: 1 Adelaide Terrace, East Perth, WA 6004) or telephone (08) 6180 4340.

Applications will be acknowledged in writing and the applicant will be notified of the decision within 45 (calendar) days.

Freedom of Information Charges

A scale of fees and charges are set under the FOI Act Regulations. Apart from the application fee for non-personal information, all charges are discretionary. The charges are as follows:

1. Type of Fee		
– Personal information about the applicant		No fee
– Application fee (for non-personal information)		\$30.00
2. Type of Charge		
– Charge for time dealing with the application (per hour, or pro rata)		\$30.00
– Access time supervised by staff (per hour, or pro rata)		\$30.00
– Photocopying staff time (per hour, or pro rata)		\$30.00
– Per photocopy		0.20 cents
– Transcribing from tape, film or computer (per hour, or pro rata)		\$30.00
– Duplicating a tape, film or computer information		Actual Cost
– Delivery, packaging and postage		Actual Cost
3. Deposits		
– Advance deposit of the estimated charges may be required		25%
– Further advance deposit may be required to meet the charges for dealing with the application		75%

For financially disadvantaged applicants or those issued with prescribed pensioner concession cards, the charge payable is reduced by 25%.

Access Arrangements

Access to documents can be granted by way of inspection, a copy of a document, a copy of an audio or video tape, a computer disk, a transcript of a recorded, shorthand or encoded document from which words can be reproduced.

Notice of Decision

As soon as possible, but in any case within 45 days of receipt of freedom of information application, the applicant will be provided with a notice of decision which will include details such as:

- The date which the decision was made;
- The name and the designation of the officer who made the decision;
- If the document is an exempt document the reasons for classifying the matter exempt; or the fact that access is given to an edited document; and,
- Information on the right to review and the procedures to be followed to exercise those rights.

Refusal of Access

An applicant who is dissatisfied with a decision of the Institute is entitled to ask for an internal review by the Institute. Application should be made in writing within 30 days of receiving the notice of decision.

Applicants will be notified of the outcome of the review within 15 days.

If the applicant disagrees with the result the applicant can apply to the Information Commissioner for an external review, and details would be advised to applicants when the internal review decision is issued.

Access and Points of Contact

The above documents are available on application by:

Contact:	Coordinator, Executive Services
Telephone:	(08) 6180 4340
E-Mail:	enquiries@mriwa.wa.gov.au
Mail:	1 Adelaide Terrace, East Perth, WA, 6004
Website:	www.mriwa.wa.gov.au



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Visit the MRIWA website for digital versions of this report.

Disclaimer

MRIWA makes the information in this report available on the understanding users exercise their own skill and care with respect to its use and interpretation. Changes in circumstances after this document is made available may impact on the accuracy of the information.

Contact us

Minerals Research Institute of Western Australia
1 Adelaide Terrace, EAST PERTH, 6004
Email: mail@mriwa.wa.gov.au
Website: www.mriwa.wa.gov.au

