



Minerals Research Institute of Western Australia

Annual Report 2014 / 2015

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Letter of Transmittal

Hon. Bill Marmion MLA
Minister for Finance; Mines and Petroleum
10th Floor, London House
216 St George's Terrace
PERTH WA 6000

Dear Minister,

I am pleased to submit the Annual Report of the Minerals Research Institute of Western Australia (MRIWA) for the period 1 July 2014 to 30 June 2015, for your information and presentation to Parliament.

This is the first full-year report for MRIWA, which commenced operation on 1 February 2014 consequent to the proclamation of the *Minerals Research Institute of Western Australia Act 2013* on 7 January 2014.

MRIWA's objective is to promote research for the development of the minerals industries in this State. The Board is satisfied with the performance of the Minerals Research Institute of Western Australia in achieving its objective.

On behalf of the MRIWA Board, I acknowledge the valuable support given to the Institute during the reporting period by your office, by the Department of Mines and Petroleum and by the members of the MRIWA Advisory Committees.



Dr Peter Lilly
CHAIRMAN
BOARD OF DIRECTORS

Date: 18th August, 2015

Overview

Executive Summary

The Minerals Research Institute of Western Australia has now completed the first full year of operation since commencing on 1 February 2014, after the *Minerals Research Institute of Western Australia Bill 2013* received royal assent on 18 December 2013.

The *Minerals Research Institute of Western Australia Act 2013* (the Act) establishes the Minerals Research Institute of Western Australia (MRIWA) as a statutory corporation to foster and promote minerals research for the benefit of Western Australia.

Whilst the Minister has ultimate control over the operations of the Institute, the leadership and management of the Institute are vested in the MRIWA Board.

Whilst 2014/15 is notable for the downturn in minerals commodity prices and the consequent reduction in investment the minerals infrastructure, exploration and new ventures, it is pleasing to report that MRIWA has achieved significant successes in 2014/15. In summary the Institute has: made a step-change improvement in external engagement; redefined its brand; become a recognised voice in national minerals innovation; ensured it is aligned with State goals; responded through its research investments to the industry cycle; and, further strengthened its governance.

More specifically, the Institute:

- Committed new investment of \$1.98 million in minerals research. This comprised \$1.44 million in nine new collaborative research projects and \$0.54 million in scholarships for PhD studies.
- The total value of the Institute's portfolio of research projects (including scholarships for PhD students) at 30 June 2015 was \$23.9 million (this value includes an estimate of \$6 million other parties' co-investment through the CRC ORE II project, which is yet to be finalised). This comprised \$5.7 million MRIWA investments and other parties' investments of \$18.2 million (again including the assumed \$6 million from the CRC ORE II project.)
- Established a strong 'pipeline' of potential applications for further MRIWA investments in research.
- Initiated all the elements of the new tertiary scholarships program approved previously by the MRIWA Board. In addition to the Odwyn Jones Awards for undergraduate students that commenced in the previous reporting period, the Institute has now awarded four MRIWA PhD Scholarships and one Directors' PhD Scholarship. The total value of tertiary scholarships awarded in 2014/15 was \$0.54 million.
- Commenced implementing the MRIWA Strategy, where the particularly notable elements are that the Institute will work to extend its activities from 'enabling research' to 'enabling research and commercialisation', and to become an influential stakeholder in the national minerals innovation system.
- Completed the major work to improve the Institute's administration systems, particularly financial and project management. The Institute reports an administration cost of 4.7% of the total value of the portfolio of research projects under management during the year, including the estimated \$6 million for the CRC ORE II project.

Operational Structure

Functions

The Minerals Research Institute of Western Australia is accountable to the Minister for Mines and Petroleum.

The Institute administers only *the Minerals Research Institute of Western Australia Act 2013*.

The Act encapsulates a number of key design principles for the new Institute, namely:

- Funding for minerals research projects is on a competitive basis that directs State funds directly to specific research projects.
- All investment decisions made by the Institute are guided by a comprehensive Research Priority Plan (a technology roadmap of the needs of the Western Australian minerals industry).
- State funds for research projects are directed to the requirements of the Western Australian minerals endowment, as identified in the Research Priority Plan.
- State funds are not available exclusively to Western Australian research organisations: the intention is to ensure scarce funds are not wasted by replicating accessible research capability and capacity that resides elsewhere.
- The Institute is to seek to optimise industry co-investment in its research activities through a leveraged grant model: State investment is to be an incentive for industry investment.
- The Institute adopts a portfolio approach to managing its research investments across research needs and through the research-development spectrum.
- The Institute seeks to engage constructively with the challenges that face the many Small to Medium Enterprise businesses that participate in the State's exploration and mining services sectors.
- The Institute will adopt contemporary best practice principles of grant administration.

The Act provides that MRIWA's Board is its governing body, provides for appointment of its seven members by the Minister, and sets out requirements regarding its constitution and procedures.

The functions granted to MRIWA in the Act are for the specific purpose of fostering and promoting minerals research for the benefit of the State.

MRIWA's functions are to:

- Undertake, procure or manage minerals research projects;
- Provide funding to individuals or corporations to enable them to undertake or participate in minerals research or other associated activities, or to engage other persons to do so;
- Keep records about minerals research projects it undertakes, procures, manages or funds;
- Work with other people, authorities and institutions about minerals research;
- Maintain current knowledge of minerals research being undertaken;
- Promote public awareness and interest in minerals research;
- Foster academic activities related to minerals research; and
- Advise the Minister about minerals research.

The Act also has scope for regulations to be made to give additional functions to MRIWA.

(Refer <http://www.mriwa.wa.gov.au/about/wamri-act>, *Minerals Research Institute of Western Australia Act 2013*, Division 2 for a full description of the MRIWA functions.)

Governance and Management Structure

Organisation

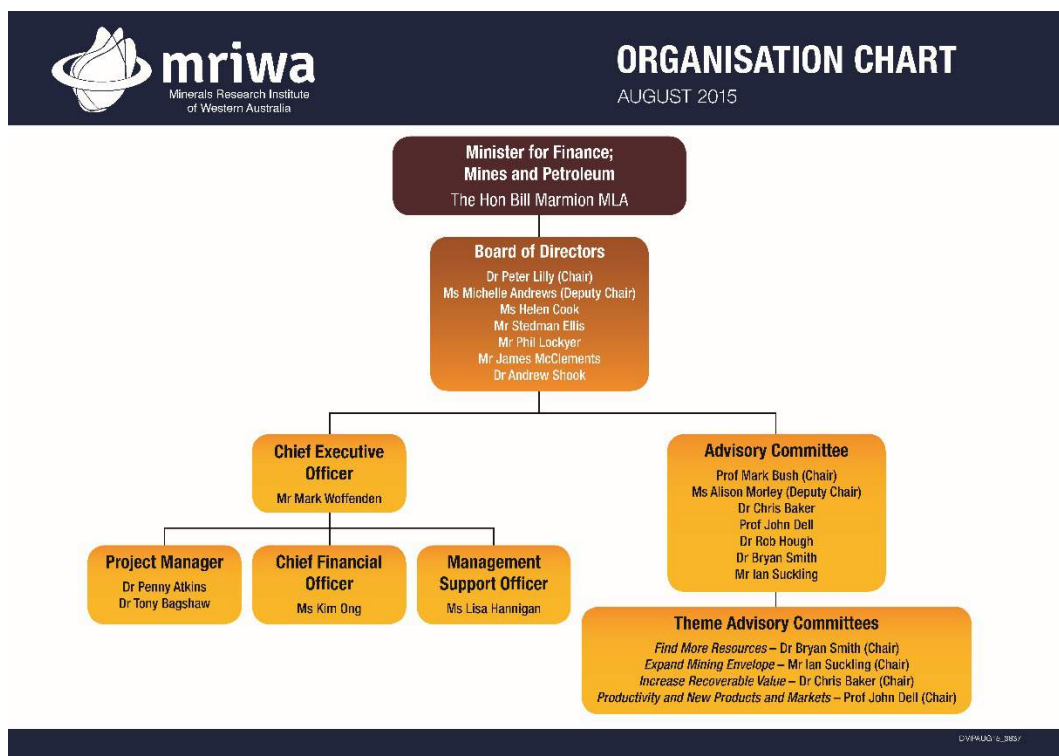




Figure 1 MRIWA Organisation Chart

Board

The Act provides for a seven-member Board for MRIWA. Details of the inaugural members of the Board are provided below.

	<p>Dr Peter Lilly has more than 36 years of varied experience in mining, applied research and academia. He is currently also Director EZONE UWA, a member of CSIRO's Mineral Resources Sector Advisory Council, Chairman of the Inductees Selection Committee for the Australian Prospectors & Miners Hall of Fame, and a Member of the Board of Trustees of the Australasian Institute of Mining & Metallurgy Education Endowment Fund. He is a former non-executive director of The Australasian Institute of Mining & Metallurgy Inc., where he was also National President and Chairman of the Board in 2006, the Australian Prospectors & Miners Hall of Fame Ltd and AMIRA International Ltd. He has also held past positions on significant State Government bodies: the First Class Mine Managers' Board of Examiners and the Mining Industry Advisory Committee.</p>
	<p>Ms Michelle Andrews was appointed Deputy Director General Strategic Policy at the Department of Mines and Petroleum in July 2011.</p> <p>Michelle has over 20 years' experience in the State Government and has developed an extensive network of contacts with a track record of negotiating outcomes with industry and peak bodies, contributing to major project approvals, reforming approval processes, establishing the Office of the Environmental Protection Authority and providing policy advice to several Environment Ministers.</p> <p>In her role, Michelle is focused on ensuring Western Australia's resources sector continues to be an attractive destination for international investment. Michelle is also improving the way the department works with other government agencies, industry and community groups, and is leading fundamental changes in the department's policy development and stakeholder engagement activities.</p>

	<p>Ms Helen Cook has close to twenty years of Board experience across a range of sectors including energy and natural resources, arts and culture, training and finance. This has included high profile government agency boards where she has delivered independent governance guidance and established sound relationships with Ministers and understanding of government protocols and issues.</p> <p>Prior to joining the MRIWA Board, Helen was the National Partner in charge of KPMG's Energy and Natural Resources Group. This role has required a deep understanding of the key opportunities and challenges faced by the mining and energy sector across Australia across all commodities, markets and up and down the supply chain.</p> <p>Helen's other current board positions are: Deputy Chair, Fremantle Port; Non-Executive Director RAC Holdings Pty Ltd, RAC Finance Ltd; UWA Mining Energy and Natural Resources Law Advisory Board; Major Performing Arts Panel, Australia Council; Non-Executive Director, Chamber of Arts & Culture WA; Director Cruthers Foundation. Helen is also a WA Councilor of the Australian Institute of Company Directors.</p>
	<p>Mr Stedman Ellis has experience at senior level in a wide variety of policy, government and advocacy roles related to the mining and petroleum industries. He currently holds the position of Chief Operating Officer Western Region for APPEA – the peak industry association for Australia's oil and gas exploration and production industry. He previously held senior executive roles for WA Government agencies dealing with the resources sector and with BHP Billiton both in Australia and overseas. Stedman is a member of the governing council of the Central Institute of Technology.</p>
	<p>Mr Phil Lockyer's initial tertiary qualifications were in Metallurgy, Mining Engineering and Mine Surveying. Subsequently, Mr Lockyer has completed studies in Business Management and Mineral Economics and holds a First Class Mine Managers Certificate.</p> <p>Mr Lockyer has a wealth of experience in senior operations leadership roles in the gold and nickel industry in Western Australia. In recent years Mr Lockyer has provided management and strategic planning services to a range of gold and base metals companies in Australia. Concurrently, Mr Lockyer has contributed extensively to the minerals industry by serving on numerous industry committees such as the WA Chamber of Mines and Energy, Occupational Health and Safety Committee and the Board of Examiners, WA Mines Regulations Act. Mr Lockyer continues as a non-executive director for a number of mining companies.</p>
	<p>Mr James McClements co-founded Resource Capital Funds in 1998 and oversees all aspects of the Fund. RCF currently manages US\$2.8 billion in investments and has raised US\$2.04 billion for its sixth fund. RCF has provided financial support to 135 mining companies involving projects located in 44 countries and relating to 29 different commodities.</p> <p>Prior to launching RCF, Mr McClements was a natural resources sector banker with N.M. Rothschild in Australia and USA. He is an honours graduate in Economics from UWA. Mr McClements has served on 12 portfolio company Boards and is current Chairman of Global Advanced Metals Pty Ltd, the world's leading tantalum producer, a Non-Executive Director of Ascot Resources Ltd and a non executive director of Mineral Resources Limited.</p>
	<p>Dr Andrew Shook has held a wide variety of different positions in the mining and processing industries over the past 25 years, with experience in copper smelting, iron and steel, rare earths and titanium.</p> <p>Dr Shook also brings experience with technical and research development, plant production analysis and operational improvements. Formerly Chief Technology and Information Management Officer with BHP Billiton Uranium, he is currently General Manager Human Systems Integration in Rio Tinto's Technology and Innovation group.</p>

Advisory Committees

The Act (section 60) enables the Board of MRIWA to appoint any advisory committee it requires to advise it in relation to its functions, and to appoint the members and determine the functions of such a committee. Appointment of committee members is on merit, not affiliation.

Advisory committees are subject to the reasonable directions of MRIWA and are able to determine their own procedures. The only statutory procedural requirement is that an advisory committee is to keep minutes of its meetings and to provide MRIWA with a copy.

The MRIWA Board is required to consider advice provided by an advisory committee but is not required to act on the advice, or to delay action pending its receipt.

To ensure that applications for research grants, in particular, are subject to appropriate consideration (given the breadth of the science and technology that the Institute's remit covers) the Board has appointed four Theme Advisory Committees (refer Figure 1) to bring discipline-specific expertise to the consideration of Applications for research grants. The advice of the Theme Advisory Committees is provided to the Advisory Committee, which assesses each application from a wider perspective.

Performance Management Framework

Objective

The objective of the Minerals Research Institute of Western Australian is to stimulate minerals research that enables industry to continue to invest in, and operate, globally competitive minerals exploration, mining, processing and export enterprises in Western Australia, and in doing so ensure that royalties paid to the State are optimised in terms of quantum and duration so that industry will continue to provide a range of economic and social benefits to the State well into the future.

Key Performance Indicators

MRIWA's activities contribute to the over-arching Government goal of responsibly managing the State's finances through effective and efficient delivery of services, encouraging economic activity and reducing the regulatory burdens on the private sector.

The performance of the Institute will be measured over the longer term by the economic benefit derived by Western Australia from the Institute's activities and, ultimately, the impact these have on optimising the minerals royalties paid to the State.

The Key Performance Indicators for the Institute were approved by Treasury during the reporting period.

The Institute's Key Effectiveness Indicator is: The ratio of total cash invested in research projects to total approved MRIWA cash investments in those projects.

The Institute's Key Efficiency Indicator is: The total administration cost for the year as a percentage of the total cash value of research projects and the education program under management during the year.

Relation to State Science Policy

From a fiscal perspective, the State Government investment in minerals research is part of the strategy to ensure that the State's mining operations are competitive with operations in lower cost jurisdictions, nationally and internationally. The State's co-investment in minerals research contributes to securing the significant revenues generated for the State by the minerals industry.

The MRIWA represents a strategic model for minerals research in Western Australia. It provides an efficiency gain for the State with research for the minerals industry being better managed, coordinated and strategically targeted than would otherwise be the case.

In April 2015, the WA Office of Science released *A Science Statement for Western Australia* that identified five areas in which the advancement and application of science can help WA broaden the economy and create a new generation of jobs. These areas are: mining and energy, medicine and health, agriculture and food, biodiversity and marine science and radio astronomy.

Research Priority Plan

Under the Act (Division 4), the Institute is required to have a Research Priority Plan (RPP) that identifies and prioritises the medium- to long-term knowledge and technology needs of the State's minerals industry. The first edition of the RPP was completed in 2013. The Act requires that the Institute must have regard to its Research Priority Plan, as revised from time to time, when performing its functions. The timing for a review of the RPP is at the discretion of the MRIWA Board.

The current RPP provides for five Themes to guide MRIWA's investments in research (refer Figure 2).

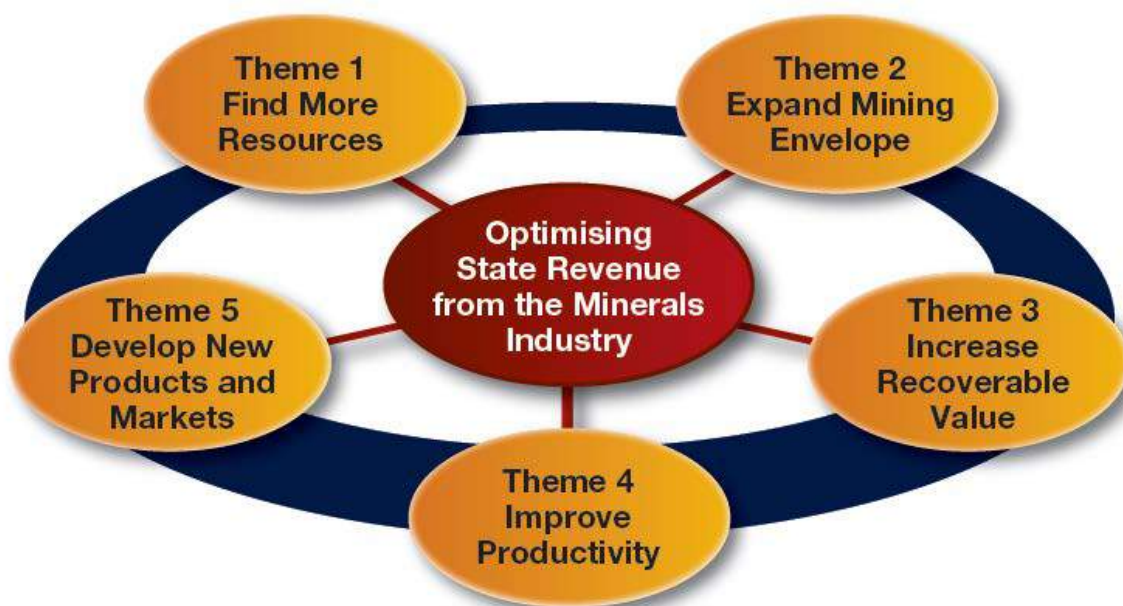


Figure 2 Themes of the Research Priority Plan

To provide greater clarity for stakeholders, Themes 1, 2 and 3 are further defined by a number of sub-Themes.

Theme		Sub-Themes
1	Find More Resources	1.1 Mapping of the depth and character of cover progressing from shallow to deeper cover. 1.2 Distal footprints research. 1.3 Development and deployment of tools that provide improved understanding of the sub-regolith geology in Western Australia. 1.4 Advanced analysis and correlation of existing geological and geophysical datasets.
2	Expand the Mining Envelope	2.1 Deep extraction systems. 2.2 Engineering in highly stressed and complex rock masses. 2.3 Productive and safe deep in-mine environments.
3	Increase Recoverable Value	3.1 Modelling and simulation of processing circuits. 3.2 Accelerated technology development frameworks.
4	Improve productivity	No sub-themes defined.
5	Develop new products and markets	No sub-themes defined

Table 1 MRIWA Research Themes and sub-Themes

The broad relationship between Theme 1 - Find More Resources, Theme 2 - Expand the Mining Envelope, and Theme 3 - Increase Recoverable Value is illustrated schematically in Figure 3. The Research Priority Plan guides MRIWA to contribute to:

- Positioning Western Australia for more effective exploration in the vast areas of the State covered by weathered material that ‘blinds’ current exploration technologies;
- Extending the reach of ‘conventional’ mining practice and technology, both open-pit and underground; and
- Developing the science and technology necessary to exploit mineralisation at great depth.

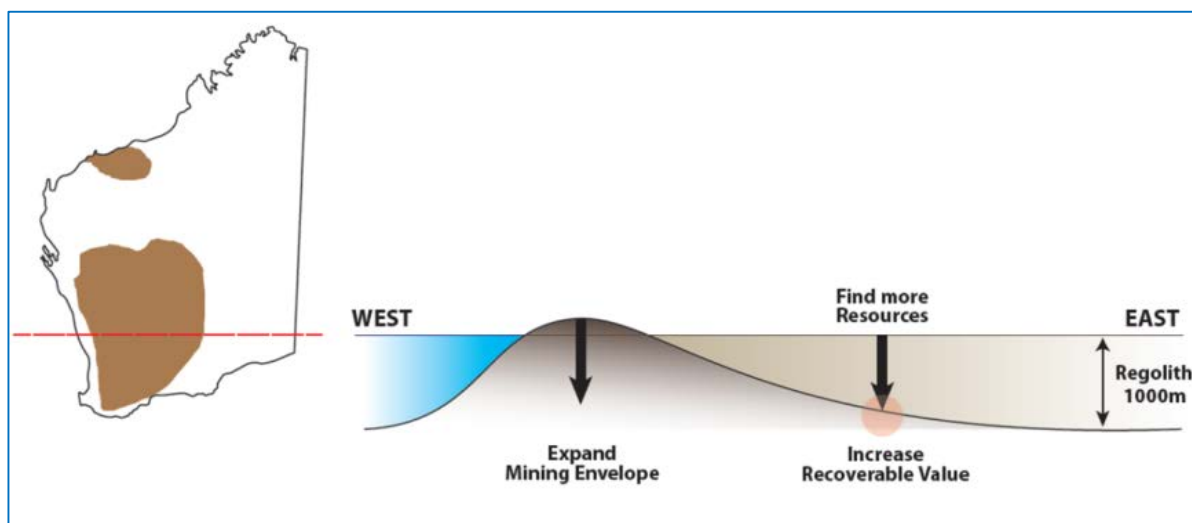


Figure 3 Schematic of the relationship between MRIWA's Research Themes and the WA geology

Agency Performance

Chair's Report

The Institute has just completed its first full financial year in operation. That it has been a very busy one will no doubt be clear to the reader of this Annual Report.

MRIWA has now become a proactive member of the national minerals innovation system, particularly in identifying our community's needs and opportunities, identifying suppliers of resources and capabilities, and encouraging proposals from leading research organisations that align with our priorities. In this way, the Institute has significantly extended its strategy from "business-as-usual" and has brought us into play with some major research initiatives around the country.

In a review of its strategy and business model during 2014/15, the Institute also identified further potential opportunities to add value through knowledge stewardship and by better facilitating the uptake of research outcomes by potential end users. In other words, we believe that our job is not done simply because a research report has been produced. It will only be done when we have taken every reasonable opportunity within our capabilities and funding envelope to ensure that those outcomes actually benefit Western Australia through innovation in the minerals sector. I look forward to commenting on progress in this area in the 2015/16 annual report.

The Institute now has a strong portfolio of projects under management with a total investment of \$23 million at year-end. The vast majority of these projects are distributed across the key themes of: finding more resources, expanding the mining envelope, increasing recoverable value, and improving productivity.

One of the challenges this year has been the notable decline in industry investment in research as a consequence of the deterioration in most of the key commodity prices. Many companies, at times like these, consider research spending as discretionary, which makes it more challenging to build the investment profiles that existed in more buoyant years. However, the Board believes that the Institute, to the extent that it can, must continue to invest in research and development through the cycle, so that the State continues to benefit from the innovation that sustains the minerals sector.

Perhaps the most enjoyable aspect of being on the Board of MRIWA is reviewing, approving and witnessing the granting of our Scholarships and Awards to outstanding students. The Institute has now invested over \$0.5 million in this program and we look forward to seeing the benefit it brings to the community when these students complete their work, companies apply the outcomes, and the individuals themselves embark on their careers in industry, government or academia.

Whilst the Institute has invested strategically and successfully in research, education and collaboration, it is essential that we develop a value proposition and business case that supports ongoing State Government financial support for the Institute beyond June 2016 when our current funding envelope requires renewal. This will be a primary focus for the Management and Board of MRIWA in 2015/2016.

In closing, I express my sincere thanks to the CEO and his small but dedicated team for successfully managing MRIWA through its first full year under the new Act. They continue to transform for the better the way the Institute engages with its three key stakeholder groups: State Government, Industry and Research Community.

The members of the Advisory Committee and associated Theme Committees continue to provide indispensable advice to the Board on matters of research project investment and priority. These people contribute generously of their time and intellect to the decision-making processes and I express my deep appreciation for their vital contribution.

I am most grateful to my colleagues on the Board of the Institute as they continue to exercise their responsibilities with enthusiasm and commitment. Such a talented group of professionals makes the role of Chair a relatively uncomplicated one.

Finally, I wish to thank our Minister, The Honourable Bill Marmion MLA, who continues to provide wholehearted support for the Institute. As I noted in last year's report, his patronage sustains the high levels of morale that pervade the Minerals Research Institute of Western Australia.



Dr Peter Lilly

Chair
Board of Directors

Date: 11th August, 2015

Operations Report

This is the first full-year Annual Report for the Minerals Research Institute of Western Australia. The Institute commenced on 1 February 2014, after the *Minerals Research Institute of Western Australia Bill 2013* received royal assent on 18 December 2013.

The external context in which the Institute operates has changed significantly since May 2012, when the then Minister for Mines and Petroleum announced that MRIWA would be established with \$7.5 million of new money allocated over three years from the 2012-13 State Budget. Of particular note are: lower commodity prices; completion of the cycle of major capital investments in the minerals industry; and, greater competition from off-shore minerals jurisdictions.

The consequences that relate to MRIWA's activities include reduced minerals royalties to the State, increased focus by the minerals industry on improving productivity, increasing 'industry pull' for innovation, an accelerating interest in introducing a 'manufacturing' approach to mining operations, a convergence of IT and operations technology, and increasing financial challenge for industry to invest in research.

It is pleasing to report that MRIWA has achieved significant successes in 2014/15. In summary, the Institute has: made a step-change improvement in external engagement; redefined its brand; become a recognised voice in national minerals innovation; ensured it is aligned with State goals; responded through its research investments to the industry cycle; and, further strengthened its governance.

The Institute's plan for 2014/15 focused on:

- Maintaining a portfolio of research projects that aligns strongly with MRIWA's objectives and the Research Priority Plan. Essential to achieving this is establishing a strong 'pipeline' of opportunities for research grants and a flow of applications to the Board.
- Fully establishing the new, greatly expanded, tertiary scholarship program.
- Developing and implementing the MRIWA strategy; this complements the *Minerals Research Institute of Western Australia Act 2013* and the Research Priority Plan that were already in place.
- Marketing the new Institute in Western Australia, nationally and commencing exposure in Europe. In accordance with the strategy, more effort is going into the Institute's engagement with the early stages of the innovation system and the mining equipment, technology services and (METS) sector.
- Enhancing organisational capability to deliver to the requirements of the Act and the increased funds allocated to the new Institute.

These objectives have been achieved.

Research investments

It is especially pleasing to report in this context that the Board has approved \$1.44 million of grants for minerals research projects. (It is noted that this refers to investments approved by the Board during the reporting period, not to investments for which legally binding contracts were completed during the reporting period, as is required for reporting in the Financial Statements.) The investments approved by the Board are summarised in Table 2, below.

Project Number	Project Title	RPP Theme	MRIWA (\$)	Co-investors (\$)	Total project (\$)
M432	Validation & Standardisation of Sequential Leaching Tests to Better Predict the Impact of Mining on Ground & Surface Water Quality	4	85,360	120,000	205,360
M434	Selective Bio-mining of Rare Earth Phosphate Ores and Minerals	3	111,770	80,000	191,770
M435	Bayesian Inversion of AEM Data for a Multidimensional World	1	99,000	118,000	217,000
M446	4D Evolution of WA Ore Systems (WA4D): Re-Os Sulfide Geochemistry	1	175,000	166,650	341,650
M448	4D Evolution of WA Ore Systems (WA4D): Rutile - pathfinder to ores	1	263,113	226,650	489,763
M450	Feasibility of Electrokinetic in situ Leaching	4	50,000	0	50,000
M452	Pathways to high grade gold: 3D gradient mapping of mineral systems	1	395,000	200,000	595,000
M458	A novel direct leach approach to extract Platinum group metals (PGM) from the Panton Sill PGM deposit in the Kimberley region of WA	3	200,000	310,860	510,860
M459	Magmatic sulfide mineral potential in the East Kimberley	1	61,320	40,000	101,320

Table 2 Summary of MRIWA research project investments in the reporting period

During 2014/15 the total value of research projects administered (comprising projects completed and projects in progress) was \$23.9 million.

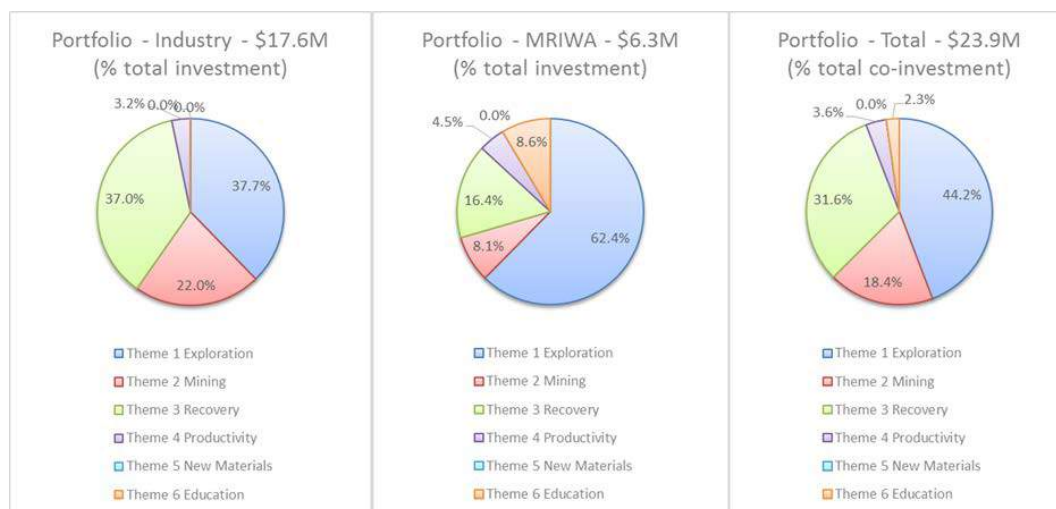


Figure 4 The distribution of investments in the MRIWA portfolio of research projects and education at 30 June 2015

It is also pleasing to report that the ‘pipeline’ of opportunities for future applications is strong and is notable for the spread across the Research Priority Plan Themes, the growing interstate participation and the larger scale of projects - both financially and with regard to the collaborations of researchers and end-users.

MRIWA Strategy

The Board approved the MRIWA strategy in September 2014. The strategy is founded on a revised business model for the Institute (refer Figure 5), which illustrates the new focus on the contribution that MRIWA looks to make to moving the results of research projects into use in the operating mining industry.



Figure 5 The MRIWA business model

To achieve its vision of promoting minerals research to optimise economic outcomes for Western Australia, MRIWA has identified and adopted several strategic goals. Two of particular note are:

- **Become an influential stakeholder in the national minerals innovation system**

The minerals research community is a complex ‘ecosystem’ involving many participants from small private enterprises, international corporations, university institutions and government agencies (refer Figure 6).



Figure 6 Schematic of the community served by MRIWA

By understanding this community and building strong relationships with the members, MRIWA aims to be an influential body, positively impacting the focus and direction of research to the benefit of our minerals industry.

- ***Extend from enabling research to enabling research and commercialisation***

To have a real impact on industry success, research must progress from its origins in fundamental research to the commercialisation and implementation of new equipment or processes. As technology or concepts progress along this pathway, the financial investment required increases significantly, which can slow down or ultimately prevent their implementation.

MRIWA can assist this difficult transition from fundamental research to commercial application by judicious co-investment in research linked to operational testing, demonstrations or by assisting with the commercialisation and marketing process.

The other elements of the MRIWA strategy are to:

- Diversify its financing strategy beyond current government funding;
- Balance the varying needs of both government and industry stakeholders; and
- Identify and strengthen MRIWA's core competencies.

Finances

MRIWA was in a sound position financially at the end of the reporting period. Results from the Financial Statements are provided in Table 3.

Item	\$ 000's
Accumulated funds opening balance at 1 July 2014	5,002
Plus income from State Government (1 July to 30 June 2015)	6,070
Less, net cost of services (1 July to 30 June 2015)	1,262
Accumulated funds as at 30 June 2015	9,810

Table 3 Summary of MRIWA's financial results for the reporting period for minerals research

Further points of note for 2014/15 are:

- The administration cost was \$1.0 million.
- The total value of MRIWA scholarships and prizes awarded was \$568,000.

The full Financial Statements for MRIWA for the reporting period are provided at page 38.

The total financial commitments included in the Financial Statements in this Report 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 shown in the Financial Statements, refer Note 22.

MRIWA Outcome Based Management Structure: Key Performance Indicators

The Outcome Based Management Structure and Key Performance Indicators (KPI) for the Institute were approved by the Department of Treasury in March 2015, to apply from the 2014/15 annual reporting period.

The KPIs, revised from those applying for the predecessor Minerals and Energy Research Institute of Western Australia, are:

- Key Effectiveness Indicator: the ratio of total cash investments in research projects to total approved MRIWA cash investment in those research projects.
- Key Effectiveness Indicator: total administration cost for the year as a percentage of the total cash value of research projects and the education program under management during the year.

The full KPI report is provided at page 71.

Economic Impact Assessment

During the reporting period MRIWA commenced the first-ever assessment of the economic impact of investments in minerals research projects by MRIWA and its predecessor the Minerals and Energy Research Institute of Western Australia, to the State of Western Australia. The assessment will be completed in the second half of 2015.

Other functions

In addition to the work to provide and manage research grants, MRIWA has progressed initiatives in its other functions during the reporting period. In summary:

- *Keep records about minerals research projects it undertakes, procures, manages or funds.* The Institute has made copies of reports from all completed research projects available through a searchable facility on the Institute's website. The support of the Department of Mines and Petroleum in establishing and maintaining this facility is gratefully acknowledged. It is pleasing to note that 4,128 copies of reports of MRIWA research projects were downloaded in the period of 6th October 2014 to 5th August 2015 (the only period for which results available). This contrasts with fewer than 50 copies being provided in previous years.
The MRIWA Recordkeeping Plan and Retention and Disposal Schedule (required under section 21 of the State Records Act 2000) were approved by the State Records Office of Western Australia.
- *Work with other people, authorities and institutions about minerals research.* The Institute has adopted a strong 'outward-facing' approach to enhancing its networks and associations. Notable amongst these has been laying the foundations for much more effective links with interstate research entities with a strong capability relevant to minerals research.
- *Maintain current knowledge of minerals research being undertaken.* This has been enhanced through wider networks, both with institutions and also with greater variety of academic disciplines.
- *Promote public awareness and interest in minerals research.* The Institute substantially enhanced its partnership activities during the reporting period; refer to MRIWA's Partnerships (page 33) for the full report.
- *Foster academic activities related to minerals research.* In addition to the strong investment in research projects, the Institute has now fully implemented a tertiary scholarships program with a total value of approximately \$1 million over the three years 2013/14 to 2015/16; refer to MRIWA Scholarship Program (page 30) for full details.
- *Advise the Minister about minerals research.* The Institute has briefed the Minister as appropriate. MRIWA gratefully acknowledges the Minister's contributions to the inaugural event to report on scientific progress of the Distal Footprint Project (M436), to the joint workshop of the MRIWA Board and Advisory Committee, and to the function to award the 2015 MRIWA Scholarships.

The Institute's summary statistics for 2014/15 are provided in Table 4.

Factors	1 July to 30 June 2015
Projects	
Applications received ⁽¹⁾	14
Projects approved	9
Projects in progress ⁽²⁾	17
Projects completed ⁽³⁾	4
Technology Transfer	
Reports published	8
	(\$'000)
Funds Received (excluding Industry Sponsorship)	
Budget appropriation - Consolidated Revenue Fund	5,673
Budget appropriation - Exploration Incentive Scheme	350
Interest	208
Total Funds Received	6,231
Less administration costs (excl. depreciation)	1,049
Funds available to support research	5,182
MRIWA Grants approved during period	
For research projects	1,440
For scholarships	540
Total grants	1,980
Industry Sponsorship for approved new projects	1,262

Note 1: Defined as being given a project number.

Note 2: Projects in progress includes those approved by the Board (Conditions of Grant may not be finalised) to approval of the final report by the MRIWA Chair.

Note 3: Projects completed to sign-off of the final report: release of the report may be delayed for up to 2 years by agreement with the Sponsor(s).

Table 4 Summary of MRIWA results for the reporting period

Research

Advisory Committee Chair's Report

The Advisory Committee and its Theme Committees form a robust mechanism for assessing research proposals presented to MRIWA. Initial advice to applicants and proposal development assistance is provided by the Project Managers in conjunction with the CEO. Once the proposal is developed to a sufficiently high level, it is passed to one of the Theme Committees, consisting of discipline experts, to conduct a thorough assessment of the proposal informed by referee's reports, and to provide further advice and assistance to the applicants if needed. The final proposal, together with the assessment by the Theme Committee, is then passed to the main Advisory Committee for further assessment and final determination of advice to be forwarded to the Board for its consideration and final decision.

The Advisory Committee brings together a wide range of strategic expertise in order to assess proposals against a number of criteria, including the scientific merit and the relevance of the proposal to the MRIWA research priorities. The Chairs of the Theme Committees are members of the Advisory Committee and the Advisory Committee Chair attends meetings of the Board, thereby providing direct communication paths between the various groups. Special combined meetings are also organised for specific purposes, such as strategic planning, ensuring a solid interlocking of all the groups.

In the time since the commencement of operations in early 2014 under the new MRIWA remit, the advisory function has significantly increased in complexity, as projects presented for consideration vary enormously in scope and budget. Increased attention is now being paid to careful ranking of proposals, taking into account not only scientific excellence but also the MRIWA portfolio composition across its research priority themes, the risk profile and the finite funding available to support projects. A significant number of very exciting and promising WA-focused projects have been approved by MRIWA over the last year. In addition, increased engagement with national minerals research initiatives is a very pleasing outcome, gaining not only valuable leverage but also raising the profile of MRIWA on the national stage.

The operations of the Theme Committees and the main Advisory Committee would be impossible without the commitment and generosity of the members, who are drawn from a range of minerals sector companies and research providers. The Chairs of the Committees carry a particularly high load and responsibility. MRIWA is now in the process of appointing new members to strengthen expertise in particular areas and to assist succession planning. I thank all members for their outstanding service to the cause of furthering innovation in this exciting and important aspect of Western Australia's industry.



Chair
MRIWA Advisory Committee
Date: 16th July, 2015

Research Project Investments

Investments in nine research projects were approved by the Board during the reporting period. The projects covered five exploration topics (finding more resources), two processing topics (increasing recoverable value) and two topics looking at developing new products and markets.

Details of each of these investments are provided below.

M432 - Validation & Standardisation of Sequential Leaching Tests to Better Predict the Impact of Mining on Ground & Surface Water Quality

This project was included in the 2013/14 Annual Report. It is included in this Report because the project had to be restructured and re-approved following the withdrawal of one sponsor.

There are strong indications that current chemical and mineralogical methodologies used to characterise waste rocks, and the long-term impact of mining on ground and surface water quality, are either “unfit for purpose” or, in the case of long-term kinetic leaching studies, take too long to complete and unduly delay the Environmental Impact Assessment (EIA) if the completion of such studies were mandatory.

Accelerated sequential leaching methodologies, which typically involve the leaching of waste rocks with a sequence of increasingly aggressive solvents, have been used to characterise municipal wastes, soil, sediments and mineral processing wastes and more recently waste rocks associated with the mining of base metals. These can be used to predict the likely order of species mobilisation and extent of extraction of metal ions and metalloids (metal oxyanions) and their potential impact on ground and surface water quality.

The key advantage of these methodologies is that they are rapid, taking only weeks to complete compared with longer term kinetic studies which can last for several years, and can be used to identify both the likely order of metal extraction through time and the potential metal/rock type associations that may impact on ground and surface water quality.

To achieve this goal, sequential leaching methodologies will be validated and assessed against longer term kinetic leaching studies, which will be conducted in parallel, using a range of representative rock types supplied by the industry sponsors.

Drs Neil Rothnie and Silvia Black lead the research team at the ChemCentre (WA). Sponsorship for this study has been committed by one company (\$120,000), with MRIWA contributing \$85,360 for a total project cash value of \$205,360 for this 2-year project.

The project contributes to MRIWA’s strategic positioning by virtue of:

- The potential contribution to improving productivity in the broader minerals industry.
- Having a major iron ore mining company as partner.
- The research being led by ChemCentre, a WA government entity, and there being a number of WA government agencies associated with the project: viz, Department of Environmental Regulation, Office of the Environment Protection Authority and the Department of Mines and Petroleum.

M434 – Selective Bio-mining of Rare Earth Phosphate Ores and Minerals

Conventional processing methods for producing rare earth elements (REE) struggle with a number of issues such as:

- Expensive reagent consumption during flotation and mineral beneficiation.
- Poor mineral separation by traditional physical separation, linked with mediocre recoveries (around 70%).
- Significant concentrate contamination, often with ultrafine minerals such as limonitic iron oxides, and apatite.

- Unwanted radionuclide deportment.
- High reagent consumption (up to 90% of the total material input).
- High waste generation associated with reacted or excess reagents.

The fledgling REE industry in WA is characterised by a predominance of smaller mining companies. Lynas Corporation is the only established mid-tier producer. However, the industry growth potential in WA and in Australia is significant, should innovative low-cost processing strategies be identified.

Thermodynamic analysis have shown that REE phosphates are significantly less stable than other metal phosphates (e.g. apatite), and uranium and thorium phosphates in particular, opening the opportunity for subtle (less aggressive) leaching approaches such as fit-for-purpose bio-leaching in lined vats or RIL/RIP circuits. Phosphate-solubilising microorganisms (PSMs) have the potential to revolutionize REE-phosphate ore processing methods.

In this project bio-mining of REE-phosphate ore will be explored in a cross-faculty collaboration that marries Curtin University's expertise in metallurgical engineering from the West Australian School of Mines (Prof Jacques Eksteen) with microbiology from the School of Biomedical Sciences (A/Prof Elizabeth Watkin).

Sponsorship for this study has been committed by one company (\$20,000), with MRIWA contributing \$111,770 and Curtin University (\$60,000) for a total project cash value of \$191,770 for this 1½-year project.

The project contributes to MRIWA's strategic positioning by virtue of:

- Opening potentially new opportunities to extract REEs from large and small scale deposits with minimal pre-processing after crushing.
- The project's potential contribution to establishing Australia, and WA in particular, as a leading producers of REEs.
- Having a REE producing company as partner.
- Bio-mining research having the potential to make Western Australia a world leader in applying biotechnology in phosphate ore processing.

M435 - Bayesian Inversion of AEM Data for a Multidimensional World

This proposal, which is Phase 1 of a planned staged research program, aims to establish the feasibility of routinely taking a Bayesian approach to the interpretation and synthesis of multiple geo-data sets when exploring through cover in WA. The project's purpose is to demonstrate the approach on a mineral system within the State. In the first instance, the project will focus on the interpretation of airborne electromagnetic (AEM) data. AEM surveys are often used in the initial stages of greenfield exploration projects when exploring through regolith cover. They are used to identify regolith variability, cover thickness and to identify exploration targets. The traditional interpretation approaches to these data have centred around deriving images of resistivity distributions of the subsurface using rapid data transformation and/or gradient-based inversion schemes. Under regolith cover targets become less pronounced and the real challenge lies in assessing the robustness of derived models, particularly in the presence of noise in the data. It is well known that inversion of AEM data is non-unique. This means that, if one model can be found that fits the measured response (which includes noise), then so can others. Analysis of the various models that fit the data allows conclusions to be drawn about the robustness of models of the underlying earth. It is important to note that explorers often have prior information and beliefs about a deposit. These are extremely valuable and both should be taken into account during geophysical inversions. A Bayesian approach provides a natural way to incorporate prior information and to quantify these prior beliefs and test them against the data to reduce non-uniqueness. Thus, the possibility of particular models which drive exploration is tempered, and exploration risk can be objectively quantified and mitigated.

Dr David Annetts leads the research team at CSIRO undertaking this study. Sponsorship has been committed by three companies and CSIRO (\$118,000), with MRIWA contributing \$99,000 for a total project cash value of \$217,000 for this nine-month project.

The project contributes to MRIWA's strategic positioning by virtue of:

- The potential for widespread utilisation of the new capability in the WA exploration industry.
- The application of high performance computing.

M446 - 4D Evolution of WA Ore Systems (WA4D): Re-Os Sulfide Geochemistry

Most metal ore deposits in WA are hydrothermal in origin, and with the exception of iron ores, most form sulfides as ore, or ore-associated, minerals. The ability to use the Re-Os isotopic method to determine the precise age of sulfides and fingerprint the sources of metals has been known for many years, but the technical advances for routine analysis and the establishment of the required analytical infrastructure have only recently been achieved in WA, at Curtin University's John de Laeter Centre. Previous geochronology studies of ore deposits in WA have relied on dating ore-associated and alteration minerals. For the first time, direct dating of an ore mineral becomes possible via the Re-Os isochron method applied to sulfides.

This project seeks to utilize the Re-Os isochron method on sulfides to determine precise ages for two classes of metal deposits in WA: volcanic-hosted massive sulfide (VHMS) Zn-Pb-Cu deposits and orogenic gold deposits. Each deposit type typically contains ore-related pyrite with or without arsenopyrite which, apart from rare molybdenite, are the two most reliable common sulfides for Re-Os geochronology. Re-Os isochron ages will be complemented by precise U-Pb and Ar-Ar ages on the selected deposits and their environs, including hostrock, stratigraphic ages, alteration and metamorphic ages, to build a precise 4D framework (spatial 3D plus time) of ore formation.

The primary benefit of this project to industry and the community will be enhanced metals exploration success via a deeper understanding of the temporal framework and genetic models of volcanogenic massive sulfide deposits in WA.

The Curtin-based research team, led by Prof Neal McNaughton, is partnering with the GSWA and one industry sponsor in this endeavor. The total value of the project is \$341,650 with MRIWA contributing \$175,000 for the 3½-year term.

The project contributes to MRIWA's strategic positioning by virtue of:

- The research being critical to understanding the timing and processes of mineralisation for volcanic-hosted massive sulfide (VHMS) and Orogenic Gold deposits in WA.
- The outcomes contributing to enhanced metals exploration success through a greater understanding of the temporal framework and genetic models of VHMS deposits in WA.
- High quality science being directed to an important exploration technology for WA.

M448 - 4D Evolution of WA Ore Systems (WA4D): Rutile - pathfinder to ores

Rutile is a mineral formed in many hydrothermal ore systems and in more recent times has been found empirically to carry geochemical signatures which characterise its mode of formation. Rutile is also a physically and chemically robust mineral which is as stable as zircon in sediment transport environments and during weathering. Combined, the robustness, datability and geochemical preservation of its mode of formation afford rutile a unique position in the 4D (special 3D and time) study of hydrothermal ore systems and for metals exploration.

This project seeks to develop rutile protocols for metals exploration in WA. It focusses on establishing new trace element fingerprints carried by rutile grains to identify their environment of formation (i.e. ore-associated vs barren) and the age of rutile formation, given that published and unpublished age data for known hydrothermal ore formation in WA tend to be synchronous within a terrain.

The project will build a database of these two independent indicators of mineralisation in WA (i.e. chemical fingerprint and age) to provide a foundation for metals exploration using rutile grains encountered in rocks/drillcore, or as detrital grains in heavy mineral concentrates from field sampling.

The potential primary benefit of this project to industry and the community will be enhanced metals exploration success via utilization of geochemical/isotopic fingerprints carried by rutile.

The Curtin-based research team, led by Prof Neal McNaughton, is partnering with the GSWA and one industry sponsor in this endeavor. The total cash value of the project is \$489,763 with MRIWA contributing \$263,113 for the 3-year term.

The project contributes to MRIWA's strategic positioning by virtue of:

- The research addressing hydrothermal ore systems – particularly gold and base metals. Both are significant in the WA minerals endowment.
- The research being conducted by a highly acclaimed research centre. The Perth community of geoscientists in which the Centre resides is similarly recognised as of world standing.
- The outputs making a practical contribution to enhanced exploration success in WA.

M450 - Feasibility of Electrokinetic in situ Leaching

As ore grades progressively decline and yields decrease, the conventional mining paradigm of mining, hauling, crushing and then treating vast amounts of ore becomes increasingly unattractive, especially for mineralisation that is at greater depth. One of the most promising alternative mining techniques that could become significantly more attractive in the future is *in situ* leaching (ISL). ISL involves using a leaching reagent (lixiviant) to dissolve and recover minerals from ores that remain in their original underground setting. While currently over 39% of uranium is mined via ISL, it has rarely been applied commercially for other metals. Over the past decade CSIRO has assessed several non-cyanide gold-complexing lixivants that were shown to function effectively in anaerobic environments.

A key challenge with ISL remains that the lixiviant travels non-uniformly through heterogeneous subsurface environments mostly along preferential flow pathways, preventing the lixiviant from direct contact with a sufficiently large percentage of the valuable metal (e.g. gold) to ensure adequate metal recovery. A potential solution to overcome this problem is to couple ISL with electrokinetic (EK) transport. The proposed EK-ISL technology uses an applied electric field to transport and direct a uniform migration of suitable lixiviant through the host orebody. EK has previously been shown to overcome the critical limitations of physical hydraulic flow and achieve relatively rapid and uniform contact of amendments in heterogeneous and low-permeability geological formations. Preliminary laboratory experiments at CSIRO and the University of WA have recently demonstrated both (i) the feasibility of gold leaching from crushed, permeable rocks by an iodide/triiodide lixiviant solution and (ii) EK-induced migration of iodide and triiodide through a weathered, intact granite and gneiss rock core.

The project is based on this preliminary work and uses a combination of laboratory-scale experimental investigations of a gold EK-ISL system and corresponding numerical simulations in order to more comprehensively assess the potential of EK-ISL. The laboratory experiments will evaluate the migration of the lixiviant through (centimetre-scale) intact rock core samples using a low-voltage direct current.

The research team will be led by Prof Andy Fourie (UWA) and Henning Prommer (CSIRO). MRIWA is contributing \$50,000 over three years to supplement the PhD scholarship awarded from the MRIWA Directors' Scholarship Fund.

The project contributes to MRIWA's strategic positioning by virtue of:

- The research having the potential to make an important contribution to devising an economic technology for exploiting a selection of mineralisation at great depth or otherwise inaccessible to current mining technology.
- Treating deposits amenable to *in-situ* leaching, for example, base metals, gold and uranium.

M452 - Pathways to high grade gold: 3D gradient mapping of mineral systems

The project aims to use 3D mineral system mapping technologies to enhance brown-fields to green-fields exploration for high grade Au deposits in the Yilgarn craton. The project will map thermochemical gradients related to the transport and deposition of gold within lithologically and structurally constrained 3D architectures. Zoning in major and minor minerals, obtained from rapid SEM scanning, in combination with other geochemical/mineralogical data (multi-element, pXRF geochemistry, spectral data and stable isotopes) will be used to identify the gradients. Mapping redox, pH and activity of H₂O gradients will be a priority as previous studies (M358, M377, M400, M410) showed these gradients potentially provide a unique combination of chemical factors determining the locality of the gold. These constraints should allow gradient mapping across brown-green-fields environments and development of criteria to navigate from background metamorphic environments through distal footprints to productive parts of systems. Robust mapping of temperature gradients will lead to a generation of scale-integrated models of mineral systems with capacity to predict the size and energy of systems in addition the nature of volatiles determining the chemical gradients within systems.

The 3D mineral system models will be developed for selected sponsor's sites through a series of modules within the overall program. The 3D mineral system models will form the basis of evaluating gradient and targeting concepts. Thermodynamic modelling of relevant chemical systems/subsystems will aid interpretation of gradients and help build a quantitative understanding of the crust-mantle scale volato-thermal systems that drove formation of late Archean gold deposits of the Yilgarn craton.

This research aims to stimulate the search for "new wealth" in "old camps" by providing a suite of new targeting tools grounded in mineral system science. Transfer of the benefits of 3D mineral system mapping to exploration for gold deposits in the Yilgarn craton will enhance effectiveness of exploration to the benefit of the sponsor companies and regional communities.

Drs John Walshe and Adam Bath lead the research team at CSIRO. Sponsorship for this study has been committed by six companies (\$200,000), with MRIWA contributing \$395,000 for a total project cash value of \$595,000 for this one-year project.

The project contributes to MRIWA's strategic positioning by virtue of:

- Enhancing brown-fields and green-fields exploration for high grade gold deposits in the Yilgarn Craton.
- Contributing to new technologies which could be entering the market within the mid-term i.e. less than 5 years.

M458 - A novel direct leach approach to extract Platinum group metals (PGM) from the Panton Sill PGM deposit in the Kimberley region of WA

While Australia is not richly endowed with PGM deposits, numerous potentially economic resources have been identified. In most cases the deposits are very remote. The Panton Sill is a PGM deposit in the East Kimberley region of Western Australia. Due to mineralogical complexities and the PGM textural associations with gangue minerals it is a particularly difficult ore to process.

While very significant in the Australian context, the deposit is not large enough to warrant the investment to construct a smelter, gas handling and matte leach facility, as has been the conventional processing route for other PGM deposits in Southern Africa and Russia.

To date the concentrates that could be prepared at acceptable PGM recoveries suffered from being too low grade for smelting, over and above the large transport costs associated with transporting low grade concentrate over large distances. Processing at site, at least to a high grade PGM process intermediate, is preferable for a viable process under current market conditions.

The project will investigate the use of a sequential stage leach approach to treat flotation concentrates. The base metals (copper and nickel) can be dissolved using bioleaching under acidic conditions.

A second stage leach using acidic thiocyanate (SCN) is proposed, firstly because the same pH is maintained as for the bioleach and secondly because acidic thiocyanate serves as a suitable lixiviant and complexing agent for PGMs (and gold, which is also present). Most of the palladium and gold are readily leachable.

The research could lead to a new, low toxicity, widely applicable hydrometallurgical processing technology for PGMs for remote deposits for which smelting would be unfeasible. Expensive smelting, gas handling and pressure leaching are eliminated, as well as their concomitant emissions, and wastes. And the cost of long distance transport of marginal concentrates is eliminated.

Prof Jacques Eksteen at the WA School of Mines, Curtin University, leads the research team. Sponsorship for this study has been committed by one company and Curtin University (\$310,860 combined), with MRIWA contributing \$200,000 for a total project cash value of \$510,860 for this 3-year project.

The project contributes to MRIWA's strategic positioning by virtue of:

- It's potential for a new low-cost process to extract platinum group metals from 'stranded' deposits, e.g. small, remote.
- Potential to provide technology to develop the PGM industry in WA.
- Allowing MRIWA the opportunity to invest in expanding the range of minerals products produced in WA.

M459 - Magmatic sulfide mineral potential in the East Kimberley

Igneous intrusions of broadly basaltic composition are the hosts for some of the world's most valuable ore deposits of Ni, Cu and PGE. Exploration for this style of deposit in Proterozoic mobile belts has recently received a major boost in WA following the discovery of the Nova deposit in greenfields-terranes and with exciting new discoveries and deposit extensions in the Musgrave province. However, detailed camp-scale targeting and exploration for these deposits remains extremely challenging and new approaches are required.

The project will investigate the prospectivity of mafic igneous intrusive rocks in the East Kimberley based on age, internal differentiation and geochemistry of parent magmas, and isotope fingerprinting of ore minerals. The centerpiece of the project will be an investigation of the relationship between multiple small intrusions in the Savannah district, including the ore-hosting Savannah intrusion itself.

Similar attributes of the neighbouring Hart Dolerite suite and its potential for PGE-enriched magmatic sulfides will also be investigated. Results will be applied to an assessment of potential exploration targets within the east Kimberley region and other greenfield areas in Proterozoic mobile belts elsewhere in WA.

The project aims to:

- Establish the petrogenetic and geochronological relationship between the Savannah and North Olivine Gabbro intrusions and their contained Ni-Cu-PGE sulfide mineralisation.
- Characterise the parent magma compositions and internal evolution of these two intrusions, and extrapolate to mineralisation potential of other nearby mafic-ultramafic intrusions in the East Kimberley province.
- Fingerprint the source and nature of sulfur in the PGE reef associated with the Hart Dolerite intrusion at Speewah and in the mineralised intrusions at Savannah.
- Apply the findings to targeting models for chonolith hosted Ni-Cu-PGE deposits applicable to other craton margin orogenic settings in WA, specifically Musgrave and Albany-Fraser terranes.

Dr Stephen Barnes (CSIRO) and Prof Marco Fiorentini (UWA) will lead the research team. Sponsorship for this study has been committed by two companies (\$40,000 total), with MRIWA contributing \$61,320, for a total project cash value of \$101,320 for this nine-month project.

The project contributes to MRIWA's strategic positioning by virtue of:

- Providing opportunity for MRIWA to invest in high calibre science with the potential to enhance exploration in WA for Ni, Cu and platinum group elements.
- Studying mafic igneous intrusive rocks in the East Kimberley which may be extended to produce targeting models for other craton margins in orogenic settings such as the Musgraves and the Albany Fraser Region.
- Including two resources companies with interests in the region.

Research Projects in Progress

The MRIWA portfolio of research projects active at the end of the reporting period is summarised in Table 5 below. The portfolio of research projects in which MRIWA is partner has a total cash value of \$23.9 million, of which MRIWA has invested \$6.3 million, providing a financial leverage of 3.8X (this is calculated including the estimated \$6 million other party co-investment in Project M441 – CRC Optimising Resource Extraction II).

No.	Project Title	Applicants	Institute	Term (yrs)	RPP (Theme)	MRIWA (\$)	Total (\$)
M417	Dynamic testing of surface support systems	Prof. E Villaescusa Dr A Thompson	WASM	4	2	120,000	1,259,539
M419	Advancing rockburst risk mitigation techniques	Prof Y Potvin Dr J Wesseloo	ACG	3	2	150,000	1,573,415
M424	Multiscale dynamics of hydrothermal mineral systems	Prof A Ord Prof B Hobbs	UWA	3	1	210,000	630,000
M430	Integrated Tailings Management	Prof A Fourie	UWA	2	4	120,000	251,000
M431	Ground Support Systems Optimisation	Prof Y Potvin	ACG	3.5	2	240,000	1,560,000
M432	Validation & Standardisation of Sequential Leaching Tests to Better Predict the Impact of Mining on Ground & Surface Water Quality	Dr N Rothnie Dr S Black	Chem Centre	2	4	85,360	205,360
No.	Project Title	Applicants	Institute	Term (yrs)	RPP (Theme)	MRIWA (\$)	Total (\$)
M434	Selective Bio-mining of Rare Earth Phosphate Ores and Minerals	Prof J Eksteen	Curtin	1.5	3	111,770	191,770
M435	Bayesian Inversion of AEM Data for a Multidimensional World	Dr D Annetts	CSIRO	0.75	1	99,000	217,000
M436	Distal Footprints of Giant Ore Systems: Capricorn WA case study	Dr R Hough	CSIRO	3	1	2,580,000	7,980,000
M437	Bayer Precipitation & Alumina Quality	Dr I Livk	CSIRO	2.5	3	150,000	600,000
M448	4D Evolution of WA Ore Systems (WA4D): Rutile - pathfinder to ores	Prof N McNaughton	Curtin	3	1	263,113	489,763
M450	Feasibility of Electrokinetic in situ Leaching	Prof A Fourie	UWA	3	4	50,000	50,000

Table 5 MRIWA research project portfolio at 30 June 2015

Research Reports Finalised

A summary of each of the research project reports finalised and released during the reporting period is provided below.

M413 Hydrothermal Footprints of Magmatic Nickel Sulfide Deposits Report No. 308

Grantee: University of WA
 Applicant: Assoc Prof Marco Fiorentini
 Grant Amount: \$384,945
 Duration: 3 years
 Commenced: April 2011
 Sponsors: Three industry sponsors

In this project the role of arsenic has been highlighted as a carrier within hydrothermal fluids. Under specific conditions, such as the presence of arsenic, hydrothermal fluids have the potential to remobilise Ni, Co and PGE, and produce a detectable halo around massive nickel sulfides. This halo can be detected using portable XRF analysers highlighting anomalous Ni and As concentrations, with low potential for false positive findings. A protocol on the use and calibration of XRF for analyses on drill core was developed, making this new found geochemical exploration tool readily applicable in the core yard.

M415 Mine Waste Rock Dump Design using Mixed Integer Programming (MIP)
Report No. 309

Grantee: WA School of Mines, Curtin University
Applicant: Assoc Prof Erkan Topal
Grant Amount: \$180,599
Duration: 3 years
Commenced: July 2011
Sponsors: Three industry sponsors

The objective of the project was to generate a mathematical optimisation model that would support and optimise waste rock placement in order to minimise haulage costs and the potential for environmental harm through the selective placement and encapsulation of reactive waste rock. This model uses mixed integer programming (MIP) techniques to minimise the haulage cost while creating an environmentally friendly waste dump. Three different types of MIP models have been developed. The main model aims to minimise overall haulage distance and required volume of re-handle (OP); the two other models minimise the deviation of available truck hours vs. schedule truck hour (TB) and combine the objectives of the OP and TB models.

The validations of the MIP models were demonstrated on a hypothetical data set containing over two million combinations. The capabilities of the models were also demonstrated through successful implementation of a real case large scale gold mining project as a second case study.

M418 Advances in Solvent Extraction Technology
Report No. 301

Grantee: CSIRO
Applicant: Dr Dave Robinson
Grant Amount: \$1,490,000
Duration: 3 years
Commenced: January 2011
Sponsors: Nine industry sponsors

This project was carried out by the CSIRO Minerals Down Under Flagship. Expanding on the successfully completed MRIWA M401 project, the work has developed fundamental capabilities, computational code and validated CFD models, and improved probes and physical modelling capabilities.

The final report was subject to a one-year publication moratorium by the industry sponsors.

M422 Enhancing Electrowinning Technology: Reduction of Acid Mist Generation
Report No. 299

Grantee: CSIRO
Applicant: Dr Rueben Rajasingam
Grant Amount: \$280,000
Duration: 1 year
Commenced: March 2012
Sponsors: Nine industry sponsors

This project was carried out by the CSIRO Minerals Down Under Flagship involving staff at Waterford, WA and Clayton, Victoria. Nine companies sponsored the research. Some experimental work was carried out in the project, utilising a half-scale cathode size electrochemical cell and sophisticated measurement techniques for studying bubble formation and size. But the main deliverable was a comprehensive literature review focussed on the physicochemical mechanisms influencing acid mist generation.

The final report was subject to a two-year publication moratorium by the industry sponsors.

***M423 Clays in the Mineral Resources Value Chain: A Literature Survey
Report No. 300***

<i>Grantee:</i>	<i>CSIRO</i>
<i>Applicant:</i>	<i>Dr Craig Klauber</i>
<i>Grant Amount:</i>	<i>\$225,000</i>
<i>Duration:</i>	<i>1 year</i>
<i>Commenced:</i>	<i>September 2012</i>
<i>Sponsors:</i>	<i>Five industry sponsors</i>

The report covers ten chapters, each written by specialist CSIRO researchers in the Minerals Down Under Flagship, dealing with most aspects of clays as they relate to the minerals sector, from fundamentals of clays through to their impacts on mineral processing.

The final report was subject to a one-year publication moratorium by the industry sponsors.

MRIWA Scholarship Program

MRIWA has now committed over \$0.5 million to tertiary student scholarships since commencement of the Institute on 1 February 2014. The bulk of this investment in research and developing capability for the minerals industry was made in 2014/15.

The Institute gratefully acknowledges the generous donation by Directors of their Board sitting fees to substantially fund two of the PhD scholarships – the Directors’ PhD Scholarships. It is planned to award two of these scholarships in the first three years of the operation of the Institute. The Board has decided that these scholarships should be directed to research in the fields of minerals data analytics, *in-situ* leaching and/or the fundamentals of scale-up.

There are two streams to the new scholarship program: i) support for undergraduate Honours and fourth year Engineering students (via the Odwyn Jones Awards); and, ii) stipends for PhD candidates for up to three and one half years of their research studies.

MRIWA started the new undergraduate stream in early 2014, awarding eight Odwyn Jones Awards of \$2000 each to students from Curtin and Murdoch Universities. The author of the best thesis of this 2014 cohort, Joshua Vinicombe, received a prize of \$3000.

In April 2015 the Board awarded six Odwyn Jones Awards, of \$5000 each, to students from Curtin University, Murdoch University and University of Western Australia.

The PhD program commenced in mid-2014 during the International (IPRS) and Domestic (APA) scholarship rounds of the Perth-based universities. The design principles for the new MRIWA PhD scholarships focused on two criteria: i) to make a significant contribution to MRIWA’s objectives; and, ii) to attract applicants with exceptional academic capability.

MRIWA has made considerable effort to engage interested Western Australian universities in the PhD scholarship program and the participating universities began advertising the program at the end of August 2014.

Thirty two applications for the PhD scholarships were received. Of these nineteen (9 from Curtin and 10 from UWA) were deemed eligible by the universities to apply for university entrance and by MRIWA to fit within the Research Priority Plan guidelines and the scholarship program design principles.

MRIWA is delighted to have awarded the 2015 PhD scholarships to the students shown in Table 6.

Applicant	Scholarship	Topic
Evelien Martens (UWA)	Directors' PhD	Feasibility of Electrokinetic In Situ Leaching
Cameron Adams (UWA)	MRIWA PhD	The relationship between positive magnetic anomalies and nickel-sulphide deposits, Kambalda, Western Australia
Stefano Caruso (UWA)	MRIWA PhD	Mapping sulphur resources in selected Precambrian terranes of Western Australia to enhance predictive targeting for gold and base metal mineralisation. Project within M436
Siwei Chen (Curtin)	MRIWA PhD	The calculation of evolution of rock fracture under the action of multiple field coupling
Ashley Uren (UWA)	MRIWA PhD	Whole-lithosphere architecture and its controlling influence on basin evolution and mineral systems in the Capricorn Orogeny of Western Australia

Table 6 Winners of the 2015 PhD Scholarships



Figure 7 Minister Bill Marmion (centre), Chair of the MRIWA Board, Peter Lilly (L), MRIWA CEO, Mark Woffenden (R) with three of the 2015 PhD scholarship winners at MRIWA's Award ceremony in April 2015. (L to R) Ms Evelien Martens (Directors' Scholarship, UWA), Mr Adam Cameron (UWA) and Mr Stefano Caruso (UWA). Ms Siwei Chen (Curtin) and Mr Ashley Uren (UWA) were unable to attend



Figure 8 Murdoch University's Odwyn Jones Awardees for 2015. L to R: Prof Gamini Senananyake, Prof Paris Bahri, Emeritus Prof Odwyn Jones, Joshu Vinicombe (Best Thesis Award Winner, 2014), Kate Grogan, Ian Wilkins, Chris Gilbertson and Guest; Dr Aleks Nikoloski

MRIWA's Partnerships

Austmine

"Austmine is Australia's leading association of the Australian Mining, Equipment, Technology and Services sector (METS)". This sector comprises firms that provide specialist services to the mining and minerals industry and it has avoided some of the cyclical peaks and troughs associated with the broader industry. It has done this by being customer-focussed and offering highly innovative solutions through ongoing investment in R&D, while collaborating widely with other suppliers on this R&D. (Source: "Australia's New Driver for Growth", Austmine, 2015).

MRIWA joined Austmine during the reporting period with a view to allowing the Institute to better connect with this vital sector of the minerals industry, to promote opportunities for further collaborative research to benefit the Western Australian economy, and to advance the Institute's strategic objective of contributing more to enabling the commercialisation of the outputs from research projects.

RIIT Unearthed Hackathon



Figure 9 A scene of the Perth RIIT Unearthed Hackathon in which MRIWA was a sponsor

"A hackathon (also known as a hack day, hackfest or codefest) is an event in which computer programmers and others involved in software development and hardware development, including graphic designers, interface designers and project managers, collaborate intensively on software projects". (Source: Wikipedia.)

"In late March 2015, Unearthed held its second open innovation event at Spacecubed, with sponsors from Iluka Resources, acQuire Technology Solutions, MRIWA, Austmine, UWA EMI, and others attending. Over 80 software developers, data scientists, and designers created 15 prototypes in just one weekend." (To see the video of this event please go to website: <http://uneearthed.solutions/events/uneearthed-perth-2015/>.)

MRIWA became a community sponsor for the Unearthed Hackathon because the sponsorship contributed to implementing MRIWA's strategy, which calls for the Institute to: communicate and evolve position and influence in the Australian minerals innovation system; evolve the research portfolio from enabling research to include enabling its commercialisation; and, develop balanced public-private relationships that deliver enduring benefits.

Additionally, the Unearthed accelerator has established a 6-month long program to help form new start-up companies and to connect them to industry mentors and customers. MRIWA's strategy is to become more prominent in the innovation section of the R&D pipeline.

Co-operative Research Centres

On 19th May 2015 the Hon Ian Macfarlane MP, Minister for Industry and Science, released the report, Growth Through Innovation and Collaboration: A Review of the Cooperative Research Centres' Programme.

The review was conducted by Mr David Miles AM. The report recommends a more targeted focus to the Programme and contains 18 recommendations.

MRIWA is pleased that, in addition to the Australian Government accepting all the recommendations, Minister Ian McFarlane has also approved CRC ORE II. In 2013-14 MRIWA had committed \$600,000 over 6 years to the application for the new-from-existing CRC. CRC ORE II seeks to improve mining productivity and efficiency through a system-value approach enabled by novel concepts of exploiting ore deposit heterogeneity using coarse separation. This is predicated on the concept that enhancing and dynamically distributing quality of feed stock provides opportunities to transform mining to a more modern manufacturing industry – which requires major technology and cultural innovation. (Source: CRC ORE website.)

The scale and reach of CRCs give MRIWA an opportunity to put WA's minerals research interests in the national arena. Another example is CRC Mining, whose research concentrates on developing innovations in mining technology, equipment and processes, on improving operational control of the mining value chain and on supporting highly skilled people who can drive adoption of new processes, technology and equipment. (Source: CRC Mining website.) CRC Mining was a sponsor of M417, Dynamic Testing of Surface Support Systems, a \$1.3 million project.

Involvement with CRCs provides MRIWA with valuable access to stakeholder communities and provides the opportunity to attract greater research investment to Western Australia than might otherwise occur.

International Centre for Radio Astronomy Research

During this reporting period, MRIWA progressed a common interest in data analytics with the International Centre for Radio Astronomy research (ICRAR) to further the State's Science strategy. The focus of the work has been on opportunities for collaborative research into the application of data analytics to data bases used by the minerals industry.

Research Partners

The following list of organisations undertook research in the reporting period for MRIWA projects in progress.

Australian Centre for Geomechanics

ChemCentre (WA)

CSIRO

Curtin University

Curtin University (WA School of Mines)

University of WA

Company Partners

The following list of companies and organisations provided financial sponsorship in the period for research projects in progress. The Board of Directors thanks these groups for their sponsorship and support.

Agnico-Eagle Ltd	Jennmar Australia
AngloGoldAshanti Australia Limited	King River Copper
Barrick (Australia Pacific) Ltd	Kirkland Lake Gold, Inc.
BCD Resources NL	La Mancha Resources Australia Pty Ltd
BHP Billiton Iron Ore	Lightning Nickel Pty Ltd
BHP Billiton Nickel West	LKAB Sweden
BHP Billiton Olympic Dam	Lynas Corporation
CRC Mining	MMG Australia Golden Grove Ltd
CODELCO - (Div Casa Matriz)	MMG Ltd
CSIRO Sponsor	Newcrest Mining Ltd
Curtin University of Technology - Sponsor	Newcrest Mining Ltd
Dywidag Systems International Pty Ltd	Newmont Mining Corporation
Excelsior Gold Ltd	Northern Star Resources Ltd
FERO Strata Pty Ltd	Panoramic Resources
First Quantum Minerals (Australia) Pty Ltd	Perilya Broken Hill Ltd
GeoBrugg AG Switzerland	Ramelius Resources Limited
Geobruigg Australia Pty Ltd	Saracen Mineral Holdings
Geological Survey of Western Australia	Silver Lake Resources
Glencore Xstrata Copper (Kidd Mine) Canada	Thermo Fisher Scientific
Gold Fields Australia	Vale Canada Ltd
Golder Associates Pty Ltd	Xstrata Nickel Australasia
Hecla Ltd	Xstrata Nickel Rim South Mine
Independence Group NL	Xstrata Zinc Mount Isa Mines Limited

Significant Issues Impacting the Agency

Attracting co-investments in minerals research, at the level achieved historically by the Institute, was noted in last year's Annual Report as being a significant challenge for the foreseeable future. This challenge remains.

There is no doubt that the prevailing difficult financial circumstances of the minerals industry are adversely affecting corporations investing in research. This challenge is magnified by the fact that MRIWA's role to support research with longer term outcomes is potentially at odds with industry's interest in funding shorter-term research.

The budget constraints faced by both the State and Federal governments inevitably limit their capacity to invest in research.

MRIWA is not immune to these circumstances as it enters the final year of its initial funding of \$7.5 million provided over 3 years.

In this generally pessimistic context, there is evidence of some resurgence of interest in investing in minerals research.

It is encouraging that the Federal Government has committed significant funds to initiatives such as the CRC Program (approval of the CRC ORE II is of particular importance to MRIWA) and also to the Industry Growth Centres Program: the IGC METS is a valuable opportunity for MRIWA.

Industry companies are increasingly looking to research to improve the productivity of their investments in capital infrastructure and labour. There are encouraging signs of a resurgence of interest in collaborative research, especially where this involves smaller companies providing technology and services to the operating industry.

There are also indicators of increasing interest in the private sector to co-invest in research in the early stages of the development of new products and services.

MRIWA will seek to work and invest with its stakeholders to amplify these opportunities for WA.

Audit and Risk Committee

During the year, in addition to the ongoing review of financials and the oversight of the audit and end of year reporting, the Audit and Risk Committee oversaw several major projects to bring continuous improvement to MRIWA's governance and management of our financial and risk systems and controls. This reflected the Board's desire to ensure that we are managing our finances and risks as effectively as possible.

The Committee oversaw significant enhancements to MRIWA's project management and finances systems (WAMS) to ensure robust controls over project management and funding. The Committee undertook further development of MRIWA's approach to risk management including deciding appropriate risk appetite, enterprise risk management processes and refinement of the risk matrix.

The Committee also oversaw the development of a Financial Management Manual (which will be finalised next year), initiated an IT disaster recovery testing exercise and updated the Institute's Conditions of Grant contract to reflect the new objectives of the organisation.

I would like to thank my fellow committee members and, in particular, management and staff for their focused attention to driving these important tasks, which have now established a sound framework for assurance and risk management for MRIWA. As a part of our remit, The Committee will continue to look for opportunities to further adopt best practice.



Helen Cook
Chair
MRIWA Audit and Risk Committee

Date: 3rd August, 2015

Disclosures and Legal Compliance

Financial Statements

Certification of Financial Statements

For the year ended 30 June 2015

The accompanying financial statements of the Minerals Research Institute of Western Australia have been prepared in compliance with the provisions of the *Financial Management Act 2006* from proper accounts and records to present fairly the financial transactions for the financial year ended 30 June 2015 and the financial position as at 30 June 2015.

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.



Dr P Lilly
Chairman of the Board
Date: 1st August 2015



Ms H Cook
Member of the Board
Date: 1st August 2015



Ms K Ong
Acting Chief Finance Officer
Date: 1st August 2015

Opinion of the Auditor General



Auditor General

INDEPENDENT AUDITOR'S REPORT

To the Parliament of Western Australia

MINERALS RESEARCH INSTITUTE OF WESTERN AUSTRALIA

Report on the Financial Statements

I have audited the accounts and financial statements of the Minerals Research Institute of Western Australia.

The financial statements comprise the Statement of Financial Position as at 30 June 2015, the Statement of Comprehensive Income, Statement of Changes in Equity and Statement of Cash Flows for the year then ended, and Notes comprising a summary of significant accounting policies and other explanatory information.

Board's Responsibility for the Financial Statements

The Board is responsible for keeping proper accounts, and the preparation and fair presentation of the financial statements in accordance with Australian Accounting Standards and the Treasurer's Instructions, and for such internal control as the Board determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

As required by the Auditor General Act 2006, my responsibility is to express an opinion on the financial statements based on my audit. The audit was conducted in accordance with Australian Auditing Standards. Those Standards require compliance with relevant ethical requirements relating to audit engagements and that the audit be planned and performed to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Institute's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of accounting estimates made by the Board, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In my opinion, the financial statements are based on proper accounts and present fairly, in all material respects, the financial position of the Minerals Research Institute of Western Australia at 30 June 2015 and its financial performance and cash flows for the year then ended. They are in accordance with Australian Accounting Standards and the Treasurer's Instructions.

Report on Controls

I have audited the controls exercised by the Minerals Research Institute of Western Australia during the year ended 30 June 2015.

Controls exercised by the Minerals Research Institute of Western Australia are those policies and procedures established by the Board 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 legislative provisions.

Board's Responsibility for Controls

The Board is responsible for maintaining an adequate system of internal control to ensure that the receipt, expenditure and investment of money, the acquisition and disposal of public and other property, and the incurring of liabilities are in accordance with the Financial Management Act 2006 and the Treasurer's Instructions, and other relevant written law.

Auditor's Responsibility

As required by the Auditor General Act 2006, my responsibility is to express an opinion on the controls exercised by the Minerals Research Institute of Western Australia based on my audit conducted in accordance with Australian Auditing and Assurance Standards.

An audit involves performing procedures to obtain audit evidence about the adequacy of controls to ensure that the Institute complies with the legislative provisions. The procedures selected depend on the auditor's judgement and include an evaluation of the design and implementation of relevant controls.

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

Opinion

In my opinion, the controls exercised by the Minerals Research Institute of Western Australia are sufficiently adequate to provide reasonable assurance that the receipt, expenditure and investment of money, the acquisition and disposal of property, and the incurring of liabilities have been in accordance with legislative provisions during the year ended 30 June 2015.

Report on the Key Performance Indicators

I have audited the key performance indicators of the Minerals Research Institute of Western Australia for the year ended 30 June 2015.

The key performance indicators are the key effectiveness indicators and the key efficiency indicators that provide information on outcome achievement and service provision.

Board's Responsibility 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 controls as the Board determines necessary to ensure that the key performance indicators fairly represent indicated performance.

Auditor's Responsibility

As required by the Auditor General Act 2006, my responsibility is to express an opinion on the key performance indicators based on my audit conducted in accordance with Australian Auditing and Assurance Standards.

The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the key performance indicators. In making these risk assessments the auditor considers internal control relevant to the Board's preparation and fair presentation of the key performance indicators in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the relevance and appropriateness of the key performance indicators for measuring the extent of outcome achievement and service provision.

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

Opinion

In my opinion, the key performance indicators of the Minerals Research Institute of Western Australia are relevant and appropriate to assist users to assess the Institute's performance and fairly represent indicated performance for the year ended 30 June 2015.

Independence

In conducting this audit, I have complied with the independence requirements of the Auditor General Act 2006 and Australian Auditing and Assurance Standards, and other relevant ethical requirements.

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 2015 included 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 and key performance indicators described above. It does not provide an opinion on any other information which may have been hyperlinked to/from these financial statements or key performance indicators. 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 refer to the hard copy of the audited financial statements and key performance indicators to confirm the information contained in this website version of the financial statements and key performance indicators.



GLEN CLARKE
DEPUTY AUDITOR GENERAL
Delegate of the Auditor General for Western Australia Perth, Western Australia
5 August 2015

Statement of Comprehensive Income

For the year ended 30 June 2015

		1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
	Notes		
COST OF SERVICES			
Expenses			
Research grants		2,167,065	1,216,027
Scholarships		111,000	16,000
Loss on disposal of assets	11	1,918	-
Employee benefits expense	6	422,521	143,633
Institute Contractor fees		140,336	61,051
Board and committee fees and costs	7	101,649	40,426
Supplies and services	8	290,380	79,968
Other expenses	9	16,065	17,008
Accommodation expenses		47,250	18,375
Depreciation expense	15	5,374	346
Total expenses		3,303,558	1,592,834
Income			
Revenue			
Interest revenue		207,908	60,615
Other revenue		77,798	23,711
Revenue from Industry Sponsorship		1,756,223	858,474
Total revenue		2,041,929	942,800
Total income other than income from State Government		2,041,929	942,800
NET COST OF SERVICES		1,261,629	650,034
Income from State Government	10		
State Government Grant		6,023,113	3,591,138
Resources received free of charge		47,250	18,375
Total income from State Government		6,070,363	3,609,513
Surplus for the period		4,808,734	2,959,479
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD		4,808,734	2,959,479

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

Statement of Financial Position

As at 30 June 2015

	Notes	2015 \$	2014 \$
ASSETS			
Current Assets			
Cash and cash equivalents	21	5,703,540	4,150,954
Restricted cash and cash equivalents	12	4,831,056	2,409,846
Receivables and other assets	13	140,063	156,705
Other Current Assets	14	67,740	47,796
Total Current Assets		10,742,399	6,765,301
Non-Current Assets			
Office equipment	15	28,262	2,074
Total Non-Current assets		28,262	2,074
TOTAL ASSETS		10,770,661	6,767,375
LIABILITIES			
Current Liabilities			
Payables	17	197,499	213,741
Provisions	18	65,209	33,661
Deferred revenue	19	693,131	1,517,054
Total Current Liabilities		955,839	1,764,456
Non-Current Liabilities			
Provisions	18	3,969	800
Total Non-Current Liabilities		3,969	800
Total Liabilities		959,808	1,765,256
Net Assets		9,810,853	5,002,119
EQUITY	20		
Accumulated surplus		9,810,853	5,002,119
Total Equity		9,810,853	5,002,119

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

Statement of Changes in Equity

For the year ended 30 June 2015

	Notes	Accumulated Surplus \$
Balance at 1 February 2014	20	2,042,640
Surplus for the period		2,959,479
Balance at 30 June 2014		5,002,119
Balance at 1 July 2014		5,002,119
Surplus for the period		4,808,734
Balance at 30 June 2015		9,810,853

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

Statement of Cash Flow

For the year ended 30 June 2015

		1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
Notes			
CASH FLOWS FROM STATE GOVERNMENT			
	State Government Grant	6,023,113	3,591,138
	Net cash provided by State Government	6,023,113	3,591,138
Utilised as follows:			
CASH FLOWS FROM OPERATING ACTIVITIES			
Payments			
	Research Grant Payments	(2,301,700)	(1,073,770)
	Employee benefits	(401,730)	(163,994)
	Institute Contractor fees	(146,929)	(48,944)
	Board and Advisory committee fees	(22,525)	(34,376)
	Supplies and Services	(289,702)	(80,311)
	GST payments on purchases	(283,500)	(120,476)
Receipts			
	Receipts from Sponsors	944,804	981,879
	Interest received	191,097	26,523
	GST receipts on sales	99,500	40,854
	Net GST receipts from taxation authority	194,848	34,393
21	Net cash used in operating activities	(2,015,837)	(438,222)
CASH FLOW FROM INVESTING ACTIVITIES			
	Purchase of non-current assets	(33,480)	-
	Net cash used in investing activities	(33,480)	-
	Net increase in cash and cash equivalents	3,973,796	3,152,916
	Cash and cash equivalents at the beginning of the period	6,560,800	3,407,884
21	CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD	10,534,596	6,560,800

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

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Note 1. Significant Accounting Policies

General

MRIWA's financial statements for the year ended 30 June 2015 have been prepared in accordance with Australian Accounting Standards. The term 'Australian Accounting Standards' includes Standards and Interpretations issued by the Australian Accounting Standard Board (AASB).

MRIWA has adopted any applicable new and revised Australian Accounting Standards from their operative dates.

Early adoption of standards

MRIWA cannot early adopt an Australian Accounting Standard unless specifically permitted by TI 1101 *Application of Australian Accounting Standards and Other Pronouncements*. There has been no early adoption of Australian Accounting Standards that have been issued or amended (but are not operative) by MRIWA for the annual reporting period ended 30 June 2015.

Note 2. Summary of significant accounting policies

(a) General statement

MRIWA is a not-for-profit reporting entity that prepares general purpose financial statements in accordance with Australian Accounting Standards, the Framework, Statements of Accounting Concepts and other authoritative pronouncements of the AASB as applied by the Treasurer's Instructions. Several of these are modified by the Treasurer's Instructions to vary application, disclosure, format and wording.

The *Financial Management Act* and the Treasurer's Instructions impose legislative provisions that govern the preparation of financial statements and take precedence over Australian Accounting Standards, the Framework, Statements of Accounting Concepts and other authoritative pronouncements of the AASB.

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.

(b) Basis of preparation

The financial statements have been prepared on the accrual basis of accounting using the historical cost convention.

The accounting policies adopted in the preparation of the financial statements have been consistently applied throughout all periods presented unless otherwise stated.

The financial statements are presented in Australian dollars and all values are rounded to the nearest dollar.

Note 3 'Judgements made by management in applying accounting policies' discloses judgements that have been made in the process of applying the Institute's accounting policies resulting in the most significant effect on amounts recognised in the financial statements.

Note 4 'Key sources of estimation uncertainty' discloses key assumptions made concerning the future, and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

(c) Reporting entity

The reporting entity comprises of MRIWA and has no related bodies.

(d) Income

Revenue recognition

Revenue is recognised and measured at the fair value of consideration received or receivable. The following specific recognition criteria must also be met before revenue is recognised for the major business activities as follows:

Rendering of services

Revenue is recognised by reference to the stage of completion of the transaction.

Interest

Revenue is recognised as the interest accrues.

Sponsorship Revenue

Sponsorship from Industry is recognised as revenue by reference to the stage of completion of the transaction, i.e. when the Institute has fulfilled its obligations for research project grants.

Deferred Revenue 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.

State Government Grant

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

Sale of goods

Revenue is recognised from the sale of goods and disposal of other assets when the significant risks and rewards of ownership transfer to the purchaser and can be measured reliably.

(e) Plant and equipment

Capitalisation/expensing of assets

Items of plant and equipment costing \$5,000 or more are recognised as assets and the cost of utilising assets is expensed (depreciated) over their useful lives. Items of plant and 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).

Initial recognition and measurement

Plant and equipment are initially recognised at cost. For items of plant and equipment acquired at no cost or for nominal cost, the cost is their fair value at the date of acquisition.

Subsequent measurement

After recognition as an asset, the historical cost model is used for the measurement of plant and equipment and stated at cost less accumulated depreciation and accumulated impairment losses.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Depreciation

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 using the straight line method, using rates which are reviewed annually. The expected useful life for plant and equipment is 3 to 7 years.

f) Impairment of Assets

Plant and equipment are tested for any indication of impairment at the end of each reporting period. 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. As MRIWA is a not-for-profit entity, unless an asset has been identified as a surplus asset, the recoverable amount is the higher of an asset's fair value less costs to sell and depreciated replacement cost.

The risk of impairment is generally limited to circumstances where an asset's depreciation is materially understated, where the replacement cost is falling or where there is a significant change in useful life. Each relevant class of assets is reviewed annually to verify that the accumulated depreciation reflects the level of consumption or expiration of the asset's future economic benefits and to evaluate any impairment risk from falling replacement costs.

The recoverable amount of assets identified as surplus assets is the higher of fair value less costs to sell and the present value of future cash flows expected to be derived from the asset. Surplus assets carried at fair value have no risk of material impairment where fair value is determined by reference to market-based evidence. Where fair value is determined by reference to depreciated replacement cost, surplus assets are at risk of impairment and the recoverable amount is measured. Surplus assets at cost are tested for indications of impairment at the end of each reporting period.

See also note 2(i) and note 13 'Receivables and other assets' for impairment of receivables.

(g) Financial instruments

In addition to cash, MRIWA has two categories of financial instrument:

- Receivables; and
- Financial liabilities measured at amortised cost.

Financial instruments have been disaggregated into the following classes:

- Financial Assets
 - Cash and cash equivalents;
 - Restricted cash and cash equivalents; and
 - Receivables.
- Financial Liabilities
 - Payables.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Initial recognition and measurement of financial instruments is at fair value which normally equates to the transaction cost or the face value. Subsequent measurement is at amortised cost using the effective interest method.

The fair value of short-term receivables and payables is the transaction cost or the face value because there is no interest rate applicable and subsequent measurement is not required as the effect of discounting is not material.

(h) Cash and cash equivalents

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.

(i) Receivables

Receivables are recognised at original invoice amount less an allowance for any uncollectible amounts (i.e. impairment). The collectability of receivables is reviewed on an ongoing basis and any receivables identified as uncollectible are written-off against the allowance account. The allowance for uncollectible amounts (doubtful debts) is raised when there is objective evidence that MRIWA will not be able to collect the debts. The carrying amount is equivalent to fair value as it is due for settlement within 30 days. See also note 2(g) 'Financial Instruments' and note 13 'Receivables and other assets'.

(j) Payables and Accrued Expenses

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. See also note 2(g) 'Financial instruments' and note 17 'Payables'.

Accrued Employee Costs represent the amount due to employees but unpaid at the end of the financial year. Accrued Employee Costs are settled within 30 days of the financial year end. The Institute considers the carrying amount of accrued employee costs to be equivalent to its fair value.

(k) Research Grants

Grants expense is recognized 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, normally on a quarterly basis.

(l) Scholarships

Scholarship expense represents the Institute's obligation to fund approved scholarships.

(m) Provision for leave

All annual leave and long service leave provisions are in respect of employee service up to the end of the reporting period. There is no annual leave provision as this leave is settled within the reporting period.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Annual leave that is not expected to be settled within 12 months after the end of the reporting period is recognised and measured at the present value of amounts expected to be paid when the liabilities are settled using the remuneration rate expected to apply at the time of settlement.

When assessing expected future payments consideration is given to expected future wage and salary levels including non-salary components such as employer superannuation contributions, as well as the experience of employee departures and periods of service. The expected future payments are discounted using market yields at the end of the reporting period on national government bonds with terms to maturity that match, as closely as possible, the estimated future cash outflows.

The provision for annual leave is classified as a current liability as MRIWA does not have an unconditional right to defer settlement of the liability for at least 12 months after the end of the reporting period.

Long service leave

The liability for long service leave that is expected to be settled within 12 months after the end of the reporting period is recognised and measured at the undiscounted amounts expected to be paid when the liability is settled.

A liability for long service leave is recognised based on remuneration rates current as at the end of the reporting period.

It is determined that the liability measured using the short-hand measurement technique was not materially different from the liability determined using the present value of expected future payments. This calculation is consistent with the MRIWA's experience of employee retention and leave taken.

Unconditional long service leave provisions are classified as current liabilities as MRIWA does not have an unconditional right to defer the settlement of the liability for at least 12 months after the end of the reporting period. Pre-conditional and conditional long service leave provisions are classified as non-current liabilities because MRIWA has an unconditional right to defer the settlement of the liability until the employee has completed the requisite years of service.

Superannuation

The Government Employees Superannuation Board (GESB) and other fund providers administer public sector superannuation arrangements in Western Australia in accordance with legislative requirements. Eligibility criteria for membership in particular schemes for public sector employees vary according to commencement and implementation dates.

Eligible employees contribute to the Pension Scheme, a defined benefit pension scheme closed to new members since 1987, or the Gold State Superannuation Scheme (GSS), a defined benefit lump sum scheme closed to new members since 1995.

Employees commencing employment prior to 16 April 2007 who were not members of either the Pension Scheme or the GSS became non-contributory members of the West State Superannuation Scheme (WSS). Employees commencing employment on or after 16 April 2007 became members of the GESB Super Scheme (GESBS).

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

From 30 March 2012, existing members of the WSS or GESBS and new employees have been able to choose their preferred superannuation fund provider. MRIWA makes contributions to GESB or other fund providers on behalf of employees in compliance with the Commonwealth Government's Superannuation Guarantee (Administration) Act 1992. Contributions to these accumulation schemes extinguish MRIWA's liability for superannuation charges in respect of employees who are not members of the Pension Scheme or GSS.

The GSS is a defined benefit scheme for the purposes of employees and whole-of-government reporting. However, it is a defined contribution plan for agency purposes because the concurrent contributions (defined contributions) made by MRIWA to GESB extinguishes the agency's obligations to the related superannuation liability.

MRIWA has no liabilities under the Pension Scheme or the GSS. The liabilities for the unfunded Pension Scheme and the unfunded GSS transfer benefits attributable to members who transferred from the Pension Scheme, are assumed by the Treasurer. All other GSS obligations are funded by concurrent contributions made by the MRIWA to the GESB.

The GESB makes all benefit payments in respect of the Pension Scheme and GSS, and is recouped from the Treasurer for the employer's share.

(n) Provisions – other

Employment on-costs

Employment on-costs, including workers' compensation insurance, are not employee benefits and are recognised separately as liabilities and expenses when the employment to which they relate has occurred. Employment on-costs are included as part of 'Other expenses' and are not included as part of MRIWA's 'Employee benefits expense'. The related liability is included in 'Employment on-costs provision'.

(o) Superannuation expense

Superannuation expense is recognized in the profit or loss of the Statement of Comprehensive Income and comprises employer contributions paid to the GSS (concurrent contributions), the West State Superannuation (WSS) Scheme, the GESB Super Scheme (GESBS) and other superannuation funds. The employer contribution paid to the GESB in respect of the GSS is paid back into the Consolidated Account by the GESB.

(p) Resources received free of charge

Resources received free of charge or for nominal cost that MRIWA would otherwise purchase if not donated, and can be reliably measured are recognised as income at fair value. Where the resource received represents a service that MRIWA would otherwise pay for, a corresponding expense is recognised. 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.

(q) Comparative figures

Comparative figures are, where appropriate, reclassified to be comparable with the figures presented in the current financial year.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Note 3. Judgements made by management in applying accounting policies

The preparation of financial statements requires management to make judgements about the application of accounting policies that have a significant effect on the amounts recognised in the financial statements. MRIWA evaluates these judgements regularly.

Note 4. Key sources of estimation uncertainty

MRIWA makes key estimates and assumptions concerning the future. These estimates and assumptions 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.

Long Service Leave

Several estimations and assumptions used in calculating MRIWA's long service leave provision 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.

Note 5. Disclosure of changes in accounting policy and estimates

Initial application of an Australian Accounting Standard

MRIWA has applied the following Australian Accounting Standards effective for annual reporting periods beginning on or after 1 July 2014 that impacted on MRIWA:

AASB 1031 Materiality

This Standard supersedes AASB 1031 (February 2010), removing Australian guidance on materiality is not available in IFRSs, and refers to guidance on materiality in other Australian pronouncements. There is no financial impact.

AASB 1055 Budgetary Reporting

This Standard requires specific budgetary disclosures in the general purpose financial statements of not-for-profit entities within the General Government Sector. MRIWA will be required to disclose additional budgetary information and explanations of major variations between actual and budgeted amounts, though there is no financial impact.

AASB 2013-3 Amendments to AASB 136 – Recoverable Amount Disclosures for Non-Financial Assets

This Standard introduces editorial and disclosure changes. There is no financial impact.

AASB 2013-9 Amendments to Australian Accounting Standards – Conceptual Framework, Materiality and Financial Instruments.

Part B of this omnibus Standard makes amendments to other Standards arising from the deletion of references to AASB 1031 in other Standards for periods beginning on or after 1 January 2014. It has no financial impact.

AASB 2014-1 Amendments to Australian Accounting Standards

Part A of this Standard consists primarily of clarifications to Accounting Standards and has no financial impact for MRIWA.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Part B of this Standard has no financial impact as MRIWA contributes to schemes that are either defined contribution plans, or deemed to be defined contribution plans.

Part C of this Standard has no financial impact as it removes references to AASB 1031 *Materiality* from a number of Accounting Standards.

Voluntary changes in Accounting Policy

There have been no voluntary changes in accounting policy.

Future impact of Australian Accounting Standards not yet operative

MRIWA cannot early adopt an Australian Accounting Standard unless specifically permitted by TI 1101 Application of Australian Accounting Standards and Other Pronouncements. Consequently, MRIWA has not applied early any of the following Australian Accounting Standards that have been issued that may impact MRIWA. Where applicable, MRIWA plans to apply these Australian Accounting Standards from their application date.

AASB 9 Financial Instruments

1 Jan 2018

This Standard supersedes AASB 139 Financial Instruments: Recognition and Measurement, introducing a number of changes to accounting treatments.

The mandatory application date of this Standard was amended to 1 January 2018 by AASB 2012-6, AASB 2013-9 and AASB 2014-1 Amendments to Australian Accounting Standards. MRIWA has not yet determined the application or the potential impact of the Standard

AASB 2010-7

1 Jan 2018

Amendments to Australian Accounting Standards arising from AASB 9 (December 2010) [AASB 1, 3, 4, 5, 7, 101, 102, 108, 112, 118, 120, 121, 127, 128, 131, 132, 136, 137, 139, 1023 & 1038 and Int 2, 5, 10, 12, 19 & 127].

This Standard makes consequential amendments to other Australian Accounting Standards and Interpretations as a result of issuing AASB 9 in December 2010.

AASB 2012-6 and AASB 2014-1 amended the mandatory application date of this Standard to 1 January 2018. MRIWA has not yet determined the application or the potential impact of the Standard.

AASB 2013-9

1 Jan 2015

Amendments to Australian Accounting Standards Conceptual Framework, Materiality and Financial Instruments.

Part C of this omnibus Standard defers the application of AASB 9 to 1 January 2017. The application date of AASB 9 was subsequently deferred to 1 January 2018 by AASB 2014-1. MRIWA has not yet determined the application or the potential impact of AASB 9.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

AASB 2014-1 Amendments to Australian Accounting Standards

1 Jan 2018

Part E of this Standard makes amendments to AASB 9 and consequential amendments to other Standards. It has not yet been assessed by the Department to determine the application or potential impact of the Standard.

AASB 2014-4 Amendments to Australian Accounting Standards – Clarification of Acceptable Methods of Depreciation and Amortisation [AASB 116 & 138]

1 Jan 2016

The adoption of this Standard has no financial impact for MRIWA as depreciation and amortisation is not determined by reference to revenue generation, but by reference to consumption of future economic benefits.

AASB 2014-5 Amendments to Australian Accounting Standards arising from AASB 15

1 Jan 2017

This Standard gives effect to the consequential amendments to Australian Accounting Standards (including Interpretations) arising from the issuance of AASB 15. MRIWA has not yet determined the application or the potential impact of the Standard.

AASB 2014-7 Amendments to Australian Accounting Standards arising from AASB 9 (December 2014)

1 Jan 2018

This Standard gives effect to the consequential amendments to Australian Accounting Standards (including Interpretations) arising from the issuance of AASB 9 (December 2014). MRIWA has not yet determined the application or the potential impact of the Standard.

AASB 2014-8 Amendments to Australian Accounting Standards arising from AASB 9 (December 2014) – Application of AASB 9 (December 2009) and AASB 9 (December 2010) [AASB 9 (2009 & 2010)]

1 Jan 2015

This Standard makes amendments to AASB 9 Financial Instruments (December 2009) and AASB 9 Financial Instruments (December 2010), arising from the issuance of AASB 9 Financial Instruments in December 2014. MRIWA has not yet determined the application or the potential impact of the Standard.

AASB 2015-1 Amendments to Australian Accounting Standards – Annual Improvements to Australian Accounting Standards 2012–2014 Cycle [AASB 1, 2, 3, 5, 7, 11, 110, 119, 121, 133, 134, 137 & 140]

1 Jan 2016

These amendments arise from the issuance of International Financial Reporting Standard Annual Improvements to IFRSs 2012–2014 Cycle in September 2014, and editorial corrections. MRIWA has not yet determined the application or the potential impact of the Standard.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

AASB 2015-2 Amendments to Australian Accounting Standards – Disclosure Initiative: Amendments to AASB 101 [AASB 7, 101, 134 & 1049]

1 Jan 2016

This Standard amends AASB 101 to provide clarification regarding the disclosure requirements in AASB 101. Specifically, the Standard proposes narrow-focus amendments to address some of the concerns expressed about existing presentation and disclosure requirements and to ensure entities are able to use judgement when applying a Standard in determining what information to disclose in their financial statements. There is no financial impact.

AASB 2015-3 Amendments to Australian Accounting Standards arising from the Withdrawal of AASB 1031 Materiality

1 Jul 2015

This Standard completes the withdrawal of references to AASB 1031 in all Australian Accounting Standards and Interpretations, allowing that Standard to effectively be withdrawn. There is no financial impact.

AASB 2015-6 Amendments to Australian Accounting Standards – Extending Related Party Disclosures to Not-for-Profit Public Sector Entities [AASB 10, 124 & 1049]

1 Jul 2016

The amendments extend the scope of AASB 124 to include application by not-for-profit public sector entities. Implementation guidance is included to assist application of the Standard by not-for-profit public sector entities. MRIWA has not yet determined the application of the Standard, though there is no financial impact.

Changes in accounting estimates

There have been no changes in accounting estimates.

Notes to and forming part of the Financial Statements
For the year ended 30 June 2015

	1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
Note 6. Employee benefits expense		
Wages and salaries	379,107	132,347
Superannuation - defined contribution plans	43,414	11,286
	<u>422,521</u>	<u>143,633</u>
Note 7. Board and committee fees and costs		
Board of Directors' remuneration	85,071	34,687
Advisory Committee attendance fees	16,578	5,739
	<u>101,649</u>	<u>40,426</u>
Note 8. Supplies and services		
Printing and Stationery	2,232	1,060
Advertising	6,426	398
Communications	22,587	8,472
Business Travel	782	402
Accounting services	135,890	46,400
Consultants	31,373	14,604
Legal services	19,532	278
Insurance	7,120	-
Sponsorships	25,000	-
Other	39,438	8,354
	<u>290,380</u>	<u>79,968</u>
Note 9. Other expenses		
Audit fees	16,055	16,564
Bad debts expense	10	444
	<u>16,065</u>	<u>17,008</u>
Note 10. Income from State Government		
State Government Grants	6,023,113	3,591,138
	<u>6,023,113</u>	<u>3,591,138</u>
Department of Mines and Petroleum	47,250	18,375
	<u>47,250</u>	<u>18,375</u>
	<u>6,070,363</u>	<u>3,609,513</u>

Notes to and forming part of the Financial Statements
For the year ended 30 June 2015

	1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
Note 11. Net gain/(loss) on disposal of non-current assets		
<u>Proceeds from disposal of non-current assets</u>		
Office equipment	-	-
<u>Costs of disposal of non-current assets</u>		
Office equipment	(1,918)	-
Net gain/(loss)	(1,918)	-

Note 12. Restricted cash and cash equivalents

Research grants	4,247,493	2,344,081
Director's Scholarship	583,563	65,765
	4,831,056	2,409,846

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

Note 13. Receivables and Other Assets

<u>Current</u>		
Grants receivable - Sponsorship	51,480	63,983
GST receivable	88,583	92,722
	140,063	156,705

There are no receivables individually determined as impaired at the end of the reporting period.

See also note 2(i) 'Receivables', 2(d) 'Sponsorship Revenue', and note 26 'Financial Instruments'.

Reconciliation of changes in the allowance for impairment of receivables

<u>Balance at the start of period</u>	-	-
Doubtful debt expense	10	444
Amounts written off during the period	(10)	(444)
Balance at the end of period	-	-

Note 14. Other Current Assets

Prepayments	10,253	7,120
Accrued Interest	57,487	40,676
	67,740	47,796

Notes to and forming part of the Financial Statements
For the year ended 30 June 2015

	1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
Note 15. Office Equipment		
<u>Office Equipment</u>		
At cost	33,480	5,530
Accumulated depreciation	(5,218)	(3,456)
	<u>28,262</u>	<u>2,074</u>
Total Office Equipment	<u>28,262</u>	<u>2,074</u>

Office Equipment		
Carrying amount at start of period	2,074	2,420
Additions	33,480	-
Disposals	(1,918)	-
Depreciation	(5,374)	(346)
Carrying amount at end of period	<u>28,262</u>	<u>2,074</u>

Note 16. Impairment of assets

There were no indications of impairment to office equipment at 30 June 2015. MRIWA held no goodwill or intangible assets with an indefinite useful life during the reporting period.

Note 17. Payables

Current

Research grants payable	134,622	-
Payables	7,905	-
Accrued research grants	-	158,257
Accrued general expenses	43,022	36,317
Accrued salaries	11,950	19,167
	<u>197,499</u>	<u>213,741</u>

See also note 2(j) 'Payables', 2(k) 'Research Grants' and note 26 'Financial Instruments'.

Note 18. Provisions

Current

Employee benefits provision		
Annual leave ^(a)	16,705	(3,179)
Long service leave	48,504	36,840
	<u>65,209</u>	<u>33,661</u>

Notes to and forming part of the Financial Statements
For the year ended 30 June 2015

	1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
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Note 18. Provisions - continued

Non - Current

Employee benefits provision

Long service leave ^(b)

	3,969	800
	<u>3,969</u>	<u>800</u>

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

Within 12 months of the end of the reporting period	16,705	(3,179)
More than 12 months after the end of the reporting period	-	-
	<u>16,705</u>	<u>(3,179)</u>

(b) Long service leave liabilities have been classified as current where there is no unconditional right to defer settlement for at least 12 months after the end of the reporting period.

Assessments indicate that actual settlement of the liabilities is expected to occur as follows:

Within 12 months of the end of the reporting period	-	-
More than 12 months after the end of the reporting period	52,473	37,640
	<u>52,473</u>	<u>37,640</u>

Note 19. Deferred revenue

Deferred Revenue - Sponsorship

	693,131	1,517,054
	<u>693,131</u>	<u>1,517,054</u>

Note 20. Equity

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

Accumulated surplus

Balance at start of period

Result for the period

Balance at end of period

Total Equity at end of period

	5,002,119	2,042,640
	4,808,734	2,959,479
	<u>9,810,853</u>	<u>5,002,119</u>
	<u>9,810,853</u>	<u>5,002,119</u>

Notes to and forming part of the Financial Statements
For the year ended 30 June 2015

	1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
Note 21. Notes to the Statement of Cash Flows		
Cash and cash equivalents	5,703,540	4,150,954
Restricted cash and cash equivalents (Note 12 'Restricted cash and cash equivalents')	4,831,056	2,409,846
	<u>10,534,596</u>	<u>6,560,800</u>
Reconciliation of net cost of services to net cash flows provided by/(used in) operating activities		
Net cost of services	(1,261,629)	(650,034)
<u>Non-cash items:</u>		
Depreciation and amortisation expense (note 15 'Office Equipment')	5,374	346
Loss on disposal of non-current asset	1,918	
Resources received free of charge (note 10 'Income from State Government')	47,250	18,375
Finance income	-	(51)
<u>(Increase)/decrease in assets:</u>		
Accrued Interest	(16,811)	(34,041)
Grants Receivable - Sponsorship	9,371	629,426
Change in GST in receivables/payables ^(b)	(184,000)	(52,652)
Net GST receipts /(payments)	194,848	45,229
<u>Increase/(decrease) in liabilities</u>		
Grants Payable - Research and Scholarship ^(a)	(23,635)	158,257
Employee Benefits	20,791	(20,361)
Deferred Revenue	(823,923)	(513,141)
Other liabilities	14,609	(19,575)
Net cash provided by/(used in) operating activities	<u><u>(2,015,837)</u></u>	<u><u>(438,222)</u></u>

(a) Note that the Australian Taxation Office (ATO) receivable/payable in respect of GST and the receivable/payable in respect of the sale/purchase of non-current assets are not included in these items as they do not form part of the reconciling items.

(b) This reverses out the GST in receivables and payables.

Notes to and forming part of the Financial Statements
For the year ended 30 June 2015

	1 July 2014 to 30 June 2015 \$	1 February 2014 to 30 June 2014 \$
Note 22. Commitments		
Other expenditure commitments		
Within 1 year	2,322,036	611,499
Later than 1 year and not later than 5 years	2,002,305	203,926
Later than 5 years	-	-
	4,324,341	815,425

The total commitments reported above represent only projects with completed contractual liabilities in place. MRIWA have 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.

Note 23. Contingent liabilities and contingent assets

MRIWA has no contingent liabilities or contingent assets.

Note 24. Events occurring after the end of the reporting period

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

Note 25. Explanatory statement

Significant variations between estimates and actual results for income and expense as presented in the financial statement are shown below: Major variances are considered to be those greater than 10% or \$10 million.

	Variance notes	Estimated 2015 \$	Actual 2015 \$	Variance between budget and actual \$
COSTS OF SERVICES				
Expenses				
Research grants	1	6,000,000	2,167,065	(3,832,935)
Scholarships	2	-	111,000	111,000
Loss on disposal of assets	3	-	1,918	1,918
Employee benefits expense		416,000	422,521	6,521
Institute Contractor fees	4	190,000	140,336	(49,664)
Board and committee fees and costs	5	-	101,649	101,649
Supplies and services	6	182,000	290,380	108,380
Other expenses	7	18,000	16,065	(1,935)
Depreciation expense	8	1,000	5,374	4,374
Accommodation expenses		45,000	47,250	2,250
Total expenses		6,852,000	3,303,558	(3,548,442)

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Note 25. Explanatory statement - continued

	Variance notes	Estimated 2015 \$	Actual 2015 \$	Variance between budget and actual \$
Income				
Revenue				
Interest revenue	9	100,000	207,908	107,908
Other revenue	10	-	77,798	77,798
Revenue from Industry Sponsorship	11	4,800,000	1,756,223	(3,043,777)
Total revenue		4,900,000	2,041,929	(2,858,071)
Total income other than income from State Government		4,900,000	2,041,929	(2,858,071)
NET COST OF SERVICES		1,952,000	1,261,629	(2,858,071)
Income from State Government				
State Government Grant	12	3,561,000	6,023,113	2,462,113
Resources received free of charge		45,000	47,250	2,250
Total income from State Government		3,606,000	6,070,363	2,464,363
Surplus for the period		1,654,000	4,808,734	3,154,734
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD		1,654,000	4,808,734	3,154,734

Variance notes:

1. Inability to forecast an accurate value of research projects under management in the early period of establishing the new Institute.
2. Scholarships became a structured program in 2015. This did not form part of the budget prior to 2015. 5 PhD scholarships to the value of \$560,000 over 3.5 years were approved and awarded by the Board in 2015. The first half yearly payments were made to the students in the 2015 year.
3. A new asset was purchased to replace the old asset. This expense is not expected to be recurring each year.
4. MRIWA employed fewer contractors than anticipated.
5. The Board and committee fees and costs form part of the Supplies and Services budget line item and was not reported separately in SIMS data.
6. Supplies and services have increased due to the following reasons:
 - a) Communications costs were higher due to unanticipated requirements for IT systems and website maintenance associated with establishing the new Institute.
 - b) Financial management costs were higher due to time spent implementing new business processes and streamlining the internal controls.
 - c) Additional consultants were engaged to perform work establishing the Institute.
 - d) One sponsorship expenditure was approved by the Board.
 - e) Other expenses were incurred in work to promote the new Institute to external stakeholders.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Note 25. Explanatory statement – continued

7. The first financial audit for the new Institute was more complex than planned.
8. Increased depreciation costs were incurred owing to new IT equipment being as a consequence of establishing the new Institute.
9. 2016 appropriation was paid to MRIWA in advance, and is held in an interest earning account.
10. Other revenue includes directors' fees and advisory committee members' sitting fees that contributed to a fund for PhD scholarships and other related activities. This was not provided for in the budget.
11. Inability to forecast an accurate value of industry sponsorship revenue for research projects under management in the early period of establishing the new Institute.
12. A proportion of the 2016 appropriation for MRIWA was paid to MRIWA in advance.

Significant variance between actual results for 2014 and 2015

MRIWA was established on 1 February 2014 and took over the unexpired portion of the 2013–14 budget appropriated by the State to the Institute. The actual 2014 outturn covered only five months and therefore the actual vs actual comparison would not be meaningful.

Note 26. Financial instruments

(a) Financial risk management objectives and policies

Financial instruments held by MRIWA are cash and cash equivalents, restricted cash and cash equivalents, receivables, and payables. MRIWA has limited exposure to financial risks. MRIWA's overall risk management program focuses on managing the risks identified below.

Credit risk

Credit risk arises when there is the possibility of MRIWA's receivables defaulting on their contractual obligations resulting in financial loss to MRIWA.

The maximum exposure to credit risk at the end of the reporting period in relation to each class of recognised financial assets is the gross carrying amount of those assets inclusive of any allowance for impairment as shown in the table at note 26(c) 'Financial instrument disclosures' and note 13 'Receivables and other assets'.

MRIWA trades only with recognised, creditworthy third parties. MRIWA has policies in place to ensure that sales of products and services are made to customers with an appropriate credit history. In addition, receivable balances are monitored on an ongoing basis with the result that MRIWA's exposure to bad debts is minimal. At the end of the reporting period there were no significant concentrations of credit risk.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Note 26. Financial instruments - continued

Liquidity risk

Liquidity risk arises when MRIWA is unable to meet its financial obligations as they fall due.

MRIWA is exposed to liquidity risk through its trading in the normal course of business.

MRIWA has appropriate procedures to manage cash flows including drawdowns of appropriations by monitoring forecast cash flows to ensure that sufficient funds are available to meet its commitments.

Market Risk

Market risk is the risk that changes in market prices such as interest rates will affect MRIWA's income or the value of its holdings of financial instruments. MRIWA does not trade in foreign currency and is not materially exposed to other price risks. The Institute's exposure to market risk for changes in interest rates relates primarily to short-term investments comprised of term deposits and bank bills. The risk is managed by the Institute through diversification and variation in maturity dates.

(b) Categories of 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 as follows:

	2015	2014
	\$	\$
<u>Financial Assets</u>		
Cash and cash equivalents	5,703,540	4,150,954
Restricted cash and cash equivalents	4,831,056	2,409,846
Receivables ^(a)	51,480	63,983
Other current assets	57,487	40,796
<u>Financial Liabilities</u>		
Financial liabilities measured at amortised cost	197,499	213,741

(a) The amount of receivables excludes GST recoverable from the ATO (statutory receivable).

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

(c) Financial instrument disclosures

Credit risk

The following table discloses MRIWA's maximum exposure to credit risk and the ageing analysis of financial assets. MRIWA's maximum exposure to credit risk at the end of the reporting period is the carrying amount of financial assets as shown below. The table discloses the ageing of financial assets that are past due but not impaired and impaired financial assets. The table is based on information provided to senior management of MRIWA.

MRIWA does not hold any collateral as security or other credit enhancements relating to the financial assets it holds.

	Carrying Amount \$	Not past due and not impaired \$	Up to 1 Month \$	1-3 months \$
2015				
Cash and cash equivalents	5,703,540	5,703,540	-	-
Restricted cash and cash equivalents	4,831,056	4,831,056	-	-
Receivables ^(a)	51,480	-	51,480	-
Other Current assets	57,487	57,487	-	-
	10,643,563	10,592,083	51,480	-
2014				
Cash and cash equivalents	4,150,954	4,150,954	-	-
Restricted cash and cash equivalents	2,409,846	2,409,846	-	-
Receivables ^(a)	63,983	-	7,333	14,666
Other Current assets	40,676	40,676	-	-
	6,665,459	6,601,476	7,333	14,666

(a) The amount of receivables excludes GST recoverable from the ATO (statutory receivable)

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Liquidity Risk and interest rate exposure

The following table details MRIWA's interest rate exposure and the contractual maturity analysis of financial assets and financial liabilities. The maturity analysis section includes interest and principal cash flows. The interest rate exposure section analyses only the carrying amounts of each item.

	Weighted average effective interest rate %	Interest rate exposure		Maturity dates						
		Carrying amount \$	Variable interest rate \$	Non- interest bearing \$	Nominal Amount \$	Up to 1 month \$	1-3 month s \$	3 months to 1 year \$	1-5 years \$	More than 5 years \$
2015										
<u>Financial Assets</u>										
Cash and cash equivalents	2.442	5,703,540	5,703,540	-	5,703,540		-	-	-	-
Restricted cash and cash equivalents	2.442	4,831,056	4,831,056	-	4,831,056		-	-	-	-
Receivables ^(a)		51,480	-	51,480	51,480		-	-	-	-
Other Current Assets		57,487	-	57,487	57,487	57,487	-	-	-	-
		10,643,563	10,534,596	108,967	10,643,563	57,487	-	-	-	-
<u>Financial Liabilities</u>										
Payables		197,499	-	197,499	197,499	197,499	-	-	-	-
		197,499	-	197,499	197,499	197,499	-	-	-	-

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

	Weighted average effective interest rate %	Interest rate exposure		Maturity dates						
		Carrying amount \$	Variable interest rate \$	Non- interest bearing \$	Nominal Amount \$	Up to 1 month \$	1-3 months \$	3 months to 1 year \$	1-5 years \$	More than 5 years \$
2014										
Financial Assets										
Cash and cash equivalents	2.828	4,150,954	4,150,954	-	4,150,954	-	-	-	-	-
Restricted cash and cash equivalents	2.828	2,409,846	2,409,846	-	2,409,846	-	-	-	-	-
Receivables ^(a)		63,983	-	63,983	63,983	-	-	-	-	-
Other Current Assets		40,676	-	40,676	40,676	40,676	-	-	-	-
		6,665,459	6,560,800	104,659	6,665,459	47,676	-	-	-	-
Financial Liabilities										
Payables		213,741	-	213,741	213,741	213,741	-	-	-	-
		213,741	-	213,741	213,741	213,741	-	-	-	-

(a) The amount of receivables excludes GST recoverable from the ATO (statutory receivable)

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Interest rate sensitivity analysis

The following table represents a summary of the interest rate sensitivity of MRIWA's financial assets and liabilities at the end of the reporting period on the surplus for the period and equity for a 1% change in interest rates. It is assumed that the change in interest rates is held constant throughout the reporting period.

	Carrying amount \$	-100 basis points		+100 basis points	
		Surplus \$	Equity \$	Surplus \$	Equity \$
2015					
Financial assets					
Cash and cash equivalents	5,703,540	(570,354)	(570,354)	570,354	570,354
Restricted Cash and cash equivalents	4,831,056	(483,106)	(483,106)	483,106	483,106
Total Increase/Decrease		(1,053,460)	(1,053,460)	1,053,460	1,053,460

	Carrying amount \$	-100 basis points		+100 basis points	
		Surplus \$	Equity \$	Surplus \$	Equity \$
2014					
Financial assets					
Cash and cash equivalents	4,150,954	(415,095)	(415,095)	415,095	415,095
Restricted Cash and cash equivalents	2,409,846	(240,985)	(240,985)	240,985	240,985
Total Increase/Decrease		(656,080)	(656,080)	656,080	656,080

Fair values

All financial assets and liabilities recognised in the Statement of Financial Position, whether they are carried at cost or fair value, are recognised at amounts that represent a reasonable approximation of fair value unless otherwise stated in the applicable notes.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

Note 27. Remuneration of board members and senior officers

Remuneration of Board members

The number of board members, whose total of fees, salaries, superannuation, non-monetary benefits and other benefits for the financial year, fall within the following bands are:

	1 July 2014 to 30 June 2015	1 February 2014 to 30 June 2014
\$		
0 - 10,000	6	7
10,000 - 20,000	1	-
	\$	\$
Base remuneration and superannuation	92,204	34,687
The total remuneration of board members are:	<u>92,204</u>	<u>34,687</u>

The total remuneration includes the superannuation expense incurred by MRIWA in respect of members of MRIWA.

No members of MRIWA are members of the Pension Scheme.

Remuneration of senior officers

The number of senior officers, other than senior officers reported as members of the accountable authority, whose total fees, salaries, superannuation, non-monetary benefits and other benefits for the financial year, fall within the following bands are:

	1 July 2014 to 30 June 2015	1 February 2014 to 30 June 2014
\$		
100,001 - 110,000	-	1
250,000 – 350,000	1	-
	\$	\$
Base remuneration and superannuation	282,245	109,675
Annual leave and long service leave accruals	27,830	(12,643)
Other benefits	23,272	10,070
The total remuneration of senior officers are:	<u>333,347</u>	<u>107,102</u>

The total remuneration includes the superannuation expense incurred by MRIWA in respect of senior officers other than board members.

Notes to and forming part of the Financial Statements

For the year ended 30 June 2015

1 July 2014	1 February 2014
to	to
30 June 2015	30 June 2014
\$	\$

Note 28. Remuneration of auditor

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

Auditing the accounts, financial statements and performance indicators

18,000	14,000
<u>18,000</u>	<u>14,000</u>

Note 29. Schedule of income and expenses by service

Treasurer's Instruction 1101(9) requires that statutory authorities provide segment information in the form of services.

MRIWA has one sole activity (or service) which is to finance and coordinate minerals and energy research.

No schedule is prepared as this information is reported in the Statement of Comprehensive Income.

Note 30. Supplementary financial information

(a) Write-offs

Public property written-off by the Authority during the period

444	-
<u>444</u>	<u>-</u>

The Institute has no related or affiliated bodies.

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

No gifts of public property were provided by the Institute.

Certification of Performance Indicators For the Year Ended 30 June 2015

We hereby certify that the 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 2015.



Dr P Lilly
Chairman of the Board
Date: 1st August 2015



Ms H Cook
Member of the Board
Date: 1st August 2015

Performance Indicators for the year ended 30 June 2015

Outcomes Based Management

The primary function of the Minerals Research Institute of Western Australia (MRIWA) is to provide and administer funding grants to carry out minerals research.

MRIWA's overarching objective is to stimulate minerals research to support investment in, and operation of, a globally competitive minerals industry in Western Australia to optimise economic and social benefits to the State into the future.

From a fiscal perspective, the State Government investment in minerals research is part of the strategy to ensure that the State's mining operations are competitive with operations in lower cost jurisdictions, nationally and internationally. The State co-investment in minerals research contributes to securing the significant revenues generated for the State by the minerals industry.

The MRIWA represents a strategic model for minerals research in Western Australia. It provides an efficiency gain for the State with research for the minerals industry being better managed, coordinated and strategically targeted than would otherwise be the case.

As well as directly supporting minerals research projects, MRIWA is also able to undertake and procure minerals research itself and to collaborate with local, Australian and worldwide research and scientific institutions. MRIWA funds are available for projects, programmes and events that promote public awareness of and interest in minerals research, and to support relevant academic activities. The expertise of MRIWA is available to the Minister and the WA Government.

Reason for new OBM for MRIWA

MRIWA commenced on 1 February 2014 after the *Minerals Research Institute of Western Australia Act 2013* (the Act) established the Minerals Research Institute of Western Australia as a statutory corporation to foster and promote minerals research for the benefit of Western Australia.

The Act repealed the *Minerals and Energy Research Act 1987* with the effect that MRIWA replaced the existing Minerals and Energy Research Institute of Western Australia (MERIWA).

The intention of the revised Key Performance Indicators reported here is to provide measurable outcomes relevant to MRIWA's objective and functions.

Desired Outcomes and Key Effectiveness Indicator

The calculation of the KPI bases the measure on:

- The decisions of the Board during the reporting period. The measure will be useful to key stakeholders as it is closely coupled to the Board decisions and is not be influenced by the lagging and highly variable process to complete the project contracts with the various parties involved, which can be up to six months.
- The end-of-month values during the reporting period, rather than just end-of-year. This refinement will allow appropriate inclusion of projects commenced and completed during the reporting period.

It is recognised that it will be appropriate for MRIWA to measure the effect of its research investments on WA State minerals royalties, and their economic impact more broadly. It is recommended that as acquiring the information for these measures is a significant undertaking, and the results are difficult to audit, they are done only periodically, say every 3 years, and are not incorporated in the OBM structure for routine use. It is also noted that the State's minerals royalties receipts vary significantly from year to year as a consequence of price and volume variations in the particular market.

Performance Indicators for the year ended 30 June 2015

Services and Key Efficiency Indicator

There has been little change in the underlying service provided to the State and the WA minerals sector with the transition from MERIWA to MRIWA: MRIWA remains a granting agency for the purpose of fostering research to the benefit of the State's minerals endowment.

The primary service provided by MRIWA is to seek research opportunities and resources, assist aggregate the resources to Grant applications and to manage completing approved projects. This is illustrated in the model of the MRIWA 'value chain':

Within this broad remit, however, some important changes have been made to the scope of MRIWA's activities when compared with MERIWA. The most important of these, with reference to the efficiency of the Institute, is that the scale of MRIWA's investments is notably higher than those of MERIWA. Where MERIWA had a total annual budget of approximately \$1 million, MRIWA has a total annual budget of approximately \$3.5 million.

Additionally,

- MRIWA will not fund projects related to the petroleum industry: MERIWA could.
- The Research Priority Plan, developed in consultation with the industry, government and researchers, establishes the scope for MRIWA Board decisions on research project grants. This scope does not provide for investment in research directly focussing on environmental or safety considerations. MERIWA could invest in research in both of these areas.

The administration effort required of the Institute is appropriately measured as a function of the total financial scale of the portfolio of research projects.

The new efficiency measure is the total administration cost for the year as a percentage of the total cash value of research projects and education program under management during the year.

The efficiency indicator is in keeping with the intention of the MRIWA Act that the Board is accountable for a portfolio of projects, with discretion to manage the interlinking elements of the project value (scale), project financial leverage and project duration, to name some of the major considerations.

OUTCOME BASED MANAGEMENT STRUCTURE	
GOVERNMENT GOAL	Financial and Economic Responsibility: Responsibly managing the State's finances through the efficient and effective delivery of services, encouraging economic activity and reducing regulatory burdens on the private sector.
AGENCY LEVEL GOVERNMENT DESIRED OUTCOME	Fostering and promoting minerals research for the benefit of the State.
KEY EFFECTIVENESS INDICATOR	
KPI 1	Ratio of total cash investments in research projects to total approved MRIWA cash investment in those research projects.
Notes:	
a) Investment totals are for projects approved by the MRIWA Board in the reporting year.	
b) Measure reported as a multiple.	

Performance Indicators for the year ended 30 June 2015

SERVICE
Administer research grant applications and manage approved projects.
KEY EFFICIENCY INDICATOR
KPI 2 Total administration cost for the year as a percentage of the total cash value of research projects and the education program under management during the year.
Notes:
a) "Under management" being from the time of Board approval of the Grant to the time of the Chair approving the final report for the project.
b) The "total value of research projects" to be calculated as the annual average of the end-of-month values.

Effectiveness Indicator – Outcome	Target (multiple)	Actual (multiple)	Comments
2014/2015	3	1.9	(a)
Efficiency Indicator – Service	Target (%)	Actual (%)	
2014/2015	4.5	6.4	(b)

- (a) The above target actual result is the consequence of the financial difficulties experienced by the minerals industry resulted from the downturn in global mineral commodity prices in recent years.
- (b) The above target actual result is primarily the consequence of the delay in finalising the contracts associated with MRIWA's investment in CRC Ore II. It is anticipated that there will be approximately \$6 million of co-investment relevant to research in Western Australia further to the Institute's commitment of \$600,000 over 6 years. No provision has been made for any Industry co-investment in the calculation of this result, if the anticipated \$6 million co-investment is included in this calculation, the actual result is estimated to be 4.7%.

Ministerial Directives

There have been no Ministerial directives to MRIWA during the reporting period.

Governance Disclosures

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 Board, the Advisory Committee and Theme Advisory Committees.

All members are aware of the matter of conflict of interest: the Board and the Committees apply standard practices for managing potential and actual conflicts of interest.

Part 4 – Administration, Subdivision 3 of the *Minerals Research Institute Act 2013* sets out the provisions for disclosure of material personal interest.

Board and Committee Remuneration

Board of the Minerals Research Institute of Western Australia

Name	Position	Type of remuneration or fee	Section of MRIWA Act	Appointment Approved	Period of Membership	Gross remuneration (\$)
Ms Michelle Jane ANDREWS	Deputy Chair	Annual / \$0	Section 27 (1) (c)	28 January 2014	3 years	11,405
Ms Helen COOK	Member	Annual / \$11,405	Section 27 (1) (a)	28 January 2014	3 years	11,405
Mr Stedman David ELLIS	Member	Annual / \$11,405	Section 27 (1) (d)	28 January 2014	2 years	11,405
Dr Peter Arthur LILLY	Chair	Annual / \$22,691	Section 27 (1) (b)	28 January 2014	2 years	22,691
Mr Clive Phillip LOCKYER	Member	Annual / \$11,405	Section 27 (1) (a)	28 January 2014	2 years	11,405
Mr James Timothy MCCLEMENTS	Member	Annual / \$11,405	Section 27 (1) (d)	28 January 2014	3 years	11,405
Mr Andrew Arthur SHOOK	Member	Annual / \$11,405	Section 27 (1) (b)	28 January 2014	3 years	11,405

Advisory Committee to the Minerals Research Institute of Western Australia

Name	Position	Type of remuneration or fee	Section of MRIWA Act	Appointment Approved	Period of Membership	Gross remuneration (\$)
Dr Christopher BAKER	Member	Attendance	Section 60 (1)	20 January 2014	2 years	768
Em Prof Mark BUSH	Chair	Attendance	Section 60 (1)	20 January 2014	2.5 years	4,292 ⁽¹⁾
Prof. John DELL	Member	Attendance	Section 60 (1)	20 January 2014	2 years	384
Dr Rob HOUGH	Member	Attendance	Section 60 (1)	20 January 2014	2 years	576
Ms Alison MORLEY	Deputy Chair	Attendance	Section 60 (1)	20 January 2014	2 years	1,152 ⁽¹⁾
Dr Bryan SMITH	Member	Attendance	Section 60 (1)	20 January 2014	2 years	960
Mr Ian SUCKLING	Member	Attendance	Section 60 (1)	20 January 2014	2 years	768

Note (1) Gross remuneration includes payments for attendance at Advisory Committee and, where applicable, Scholarship Panel.

Theme Committees

Name	Position (see Note 2)	Type of remuneration or fee	Section of MRIWA Act	Appointment Approved	Period of Membership	Gross remuneration (\$)
Prof Parisa BAHRI	Member Theme 4 & 5	Attendance	Section 60 (1)	20 January 2014	28 February 2015	498 ⁽¹⁾
Dr Christopher BAKER	Chair Theme 3	Attendance	Section 60 (1)	20 January 2014	29 February 2016	176
Mr Peter BEWICK	Member Theme 1	Attendance	Section 60 (1)	20 January 2014	29 February 2016	570
Dr James CLEVERLEY	Member Theme 1	Attendance	Section 60 (1)	20 January 2014	29 February 2016	570
Mr Gerard DANCKERT	Member Theme 2	Attendance	Section 60 (1)	20 January 2014	29 February 2016	342
Prof. John DELL	Member Theme 4 & 5	Attendance	Section 60 (1)	20 January 2014	29 February 2016	580
Dr James KYLE	Member Theme 3	Attendance	Section 60 (1)	20 January 2014	29 February 2016	114
Mr Chris DU PLESSIS	Member Theme 3	Attendance	Section 60 (1)	20 January 2014	29 February 2016	114

Name	Position (see Note 2)	Type of remuneration or fee	Section of MRIWA Act	Appointment Approved	Period of Membership	Gross remuneration (\$)
Dr Ivor ROBERTS	Member Theme 1	Attendance	Section 60 (1)	20 January 2014	29 February 2016	456
Dr Gamini SENANAYAKE	Member Theme 3	Attendance	Section 60 (1)	20 January 2014	29 February 2016	228
Dr Bryan SMITH	Chair Theme 1	Attendance	Section 60 (1)	20 January 2014	29 February 2016	1,232
Mr William STAUNTON	Member Theme 3	Attendance	Section 60 (1)	20 January 2014	29 February 2016	368
Mr Ian SUCKLING	Chair Theme 2	Attendance	Section 60 (1)	20 January 2014	29 February 2016	528
Dr Chris WARD	Member Theme 4 & 5	Attendance	Section 60 (1)	20 January 2014	29 February 2016	114
Prof. Kathleen WRIGHT	Member Theme 4 & 5	Attendance	Section 60 (1)	20 January 2014	29 February 2016	690 ⁽¹⁾

Note (1) Gross remuneration includes payments for attendance at Theme Advisory Committee and, where applicable, Scholarship Panel.

Note (2). There are separate Theme Advisory Committees for Themes 1, 2 and 3 and a single Theme Advisory Committee for Themes 4 and 5. This structure is designed to match the expected work load and will be amended if necessary.

Other Legal Requirements

Expenditure on Advertising, Market Research, Polling and Direct Mail

In accordance with s175ZE of the *Electoral Act 1907*, the MRIWA incurred the following expenditure in advertising, market research, polling, direct mail and media advertising:

Total expenditure for the reporting period was \$4,284.

Expenditure was incurred in the following areas	Total	Expenditure	Amount
Advertising agencies	\$4,284	PK Print DMP Communications Telstra Directories Listings	\$675 \$1,015 \$2,594
Market research organisations	Nil		
Polling organisations	Nil		
Direct mail organisations	Nil		
Media advertising organisations	Nil		

Disability Access and Inclusion Plan Outcomes

The Institute is housed within the Department of Mines and Petroleum building, Mineral House, 100 Plain Street, East Perth, which has a comprehensive and effective plan to ensure compliance with the *Disability Services Act, 1993*.

Compliance with Public Sector Standards and Ethical Codes

During the reporting period there were no known breaches of public sector standards, the *Code of Ethics* or the Institute's Code of Conduct and Ethics.

Recordkeeping Plans

The Institute's Recordkeeping Plan and the Retention and Disposal Plan were approved by the State Records Commissioner during the reporting period.

Substantive Equality

Due to the small size of the Institute, matters concerning women, family and domestic violence, equal employment opportunities, language, cultural diversity and youth were addressed on an individual basis, as required.

Occupational Safety, Health and Injury Management

There were no fatalities or lost time injuries during the reporting period.

The Institute was housed within the Department of Mines and Petroleum building, Mineral House, 100 Plain Street, East Perth. MRIWA is developing its own OS&H policies and procedures. Where appropriate, MRIWA adhered to the OSH and Injury Management Policies and Practices of the Department of Mines and Petroleum.

Legislation Impacting on the Institute's Activities

Freedom of Information

There were no applications under the *Freedom of Information Act* during the year. A copy of the Information Statement is available by contacting the Chief Executive Officer on (08) 6180 4343 or by writing to the Minerals Research Institute of Western Australia, 100 Plain Street, East Perth 6004.

Disability Services Plan

The Institute is housed within the Department of Mines and Petroleum building, Mineral House, 100 Plain Street, East Perth, which has a comprehensive and effective plan to ensure compliance with the *Disability Services Act, 1993*.

Customer Group Outcomes

Due to the small size of the Institute, matters concerning women, family and domestic violence, equal employment opportunities, language, cultural diversity and youth were addressed on an individual basis, as required.

Corruption Prevention

The Board of MRIWA was satisfied that the processes and procedures followed by the Institute, its staff and committees were robust and effective in the requirement to eliminate the possibility of corruption.

Annual Estimates 2015/16

Section 66 of the Minerals Research Institute of Western Australia Act 2013 applies the Financial Management Act 2006 (FMA) in full and without exceptions. MRIWA has not been otherwise directed by the Treasurer.

The annual estimates for 2015/16, as approved by the Minister for Finance; Mines and Petroleum, are as follows.

STATEMENT OF COMPREHENSIVE INCOME

	ESTIMATE 2016 \$
COST OF SERVICES	
Expenses	
Research grants	3,150,000
Scholarships	273,000
Loss on disposal of assets	-
Employee benefits expense	402,297
Institute Contractor fees	242,687
Board and committee fees and costs	126,516
Supplies and services	207,490
Other expenses	18,000
Accommodation expenses	47,250
Depreciation expense	6,000
Total expenses	4,473,240
Income	
<i>Revenue</i>	
Interest revenue	200,000
Other revenue	68,311
Revenue from Industry Sponsorship	2,350,000
Donations	-
Total revenue	2,618,311
Total income other than income from State Government	2,618,311
NET COST OF SERVICES	1,854,929
Income from State Government	
State Government Grant	1,611,000
Resources received free of charge	47,250
Total income from State Government	1,658,250
Surplus for the period	(196,679)
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD	(196,679)