

EDUCATION, SCIENCE AND TRAINING

SENATE LEGISLATION COMMITTEE – QUESTIONS ON NOTICE 2003-2004 ADDITIONAL ESTIMATES HEARING

Outcome: CSIRO
Output Group: - CSIRO

DEST Question No. E964_04

Senator Carr provided in writing.

Question:

Has CSIRO, at any level, received from mining companies, industry associations such as the Australian Geosciences Council or the Australian Mining Industry Research Association or individuals in the industry expressions of concern about this decision, including the decision to close the lead isotope facility?

What concern, if any, has been expressed by companies or associations in this respect about:

- The capacity of CSIRO to provide in future a level of service to industry equivalent to that provided by such facilities at North Ryde,
- Whether such a closure is in the best interest of the industry,
- The degree to which the closure may compromise benefits anticipated from industry-funded research undertaken by CSIRO,
- A loss of research capacity resulting from the closure of these facilities?

When, and by whom, was such concern expressed?

Have any of these companies or associations sought that CSIRO reconsider its decision?

Please provide copies of all correspondence or advice received by CSIRO Division from mining companies, industry associations and individuals relating to the decision to break up the research facilities at North Ryde, particularly the Lead Isotope facility?

Answer:

CSIRO has provided the following response.

- a) CSIRO has not closed the lead isotope facility, nor has it announced its closure. CSIRO Exploration and Mining (CEM), through discussions with CSIRO Petroleum Resources, has preserved the lead isotope capability.

CSIRO has received correspondence (Attachments 1 and 2) from the Australian Mining Industry Research Association (AMIRA), expressing their concerns and those of industry about the perception of the closure of the lead laboratory. (The comments from industry which accompany the email at Attachment 2 were provided to CSIRO by AMIRA. In the time available, it has not been possible for CSIRO to check with the individual companies as to whether they would consent to this information being made public.)

CSIRO also received two letters from Dr David Denham, President, Australian Geoscience Council. You will note in the first letter (Attachment 3) that Dr Denham raised concerns regarding a 10% cut in the Division's 2003/04 budget and the possible flow-on implications.

CEM provided a detailed response to Dr Denham's first letter (Attachment 4) and you will note in the return correspondence of 4 September 2003 from Dr Denham (Attachment 5) that he was fully supportive of the Division's revised activities post-restructure.

Dr Denham stated, "The AGC is fully supportive of your four research issues. They form a pragmatic set of themes for mineral exploration research activities, which should align strongly with the interests of mineral explorers."

- b) No industry association or company has asked CSIRO to reconsider its broader strategic decision. However, as the attached correspondence shows, AMIRA asked for a re-assessment by CEM of the lead isotope laboratory. Following discussions with interested parties, the Division has decided to keep the facility open (see also detailed answer to question E966_04).

-----Original Message-----

From: Alan Goode [mailto:Alan.goode@amira.com.au]
Sent: Thursday, 18 September 2003 11:52 AM
To: Hill Rod
Cc: Phillips, Neil (E&M, Melb Business Centre); Cucuzza Joe
Subject: CSIRO Lead Isotope Facility

Dear Rod

We are writing to voice some serious concerns over what appears to be an about face over the support of the lead isotope facility in North Ryde, subsequent to your assurance to the contrary at our lunch meeting of 11 August. We left the meeting believing that the groups led by Jon Huntington and Art Raiche, as well as Graham Carr and the lead isotope capability will all be kept in place for the foreseeable future. Under the scientific leadership of these top scientists, CSIRO has been the recipients of major company support through AMIRA over a significant period of time, with two projects currently active (P223E and P618) and one recently completed (P685). All represent proven world-class research capabilities with ongoing quality outputs which are not reproducible elsewhere in Australia.

As a result of that meeting company representatives at the P618 sponsors meeting held on the following day were reassured of CSIRO's continued support of the facility.

We are therefore very concerned to hear that instructions have been given that P618 should be concluded early, apparently by increasing available resources, and furthermore that ongoing support for the lead isotope facility will be withdrawn after its conclusion.

Firstly, P618 has an approved program and timetable, and although in principle can be "fast-tracked" in practice this may not be possible for various practical reasons. It is due to finish in May 2004. We would be concerned if it was fast tracked at the expense of doing a good job.

Secondly, and even more seriously, we do not believe that it's in the best interests of CSIRO and industry to extinguish the capability that the isotope facility offers. Isotope tracer work has and will be increasingly a key to mineral deposit research and practical exploration technology; as an example, lead isotopes have long been a key exploration tool in base metal and gold exploration due to CSIRO's pioneering work. There are no other laboratories in Australia (and probably elsewhere) capable of delivering the quality data or experience required if the North Ryde facilities close. The labs cannot be moved – the critical clean lab is worth about \$2 million, and the general analytical facilities are also jointly owned by various universities. Very importantly, one of the key outputs from P618 is to deliver a fast, low cost high quality analytical facility to allow routine exploration application – this was emphasised at the recent sponsors meeting as a key objective. Sponsors (who include BHP Billiton, Anglo American and Teck Cominco) will be extremely unhappy at the prospect of funding P618 when the deliverables cannot be utilised through a lack of appropriate laboratories being available.

We therefore urge CSIRO to reconsider its lack of support for the lead isotope facility in North Ryde. We would be pleased to discuss the situation with you and Neil to see whether there is an alternative course of action that could preserve this important facility.

Regards

Joe Cucuzza Alan Goode

-----Original Message-----

From: Alan Goode [mailto:Alan.goode@amira.com.au]

Sent: Friday, 3 October 2003 4:33 PM

To: Rod.Hill@csiro.au; Joe Cucuzza

Cc: Neil.Phillips@csiro.au; Cucuzza Joe

Subject: RE: CSIRO Lead Isotope Facility

Dear Rod and Neil

Thank you for your replies. We certainly understand the prerogative of CSIRO management to decide their research priorities based on the Government's declared objectives, although one would hope that the overall prime aim of CSIRO is to assist industry to become and remain competitive on the world scene for the benefit of Australia in general.

Following your response to our email, we have canvassed the sponsors of the P618 project, as well as our members in general. We have had a unanimous response from a wide range of companies in support of maintaining the lead isotope facility as a valuable and irreplaceable resource to the Australian exploration scene, and a general comment re lack of consultation with industry prior to your decision.

We would therefore appreciate an opportunity to discuss these responses, and to endeavour to find a satisfactory resolution acceptable to both CSIRO and industry which will allow the facility to continue.

Regards

Alan

**The following document was an attachment to the email from AMIRA to CSIRO
(provided at Attachment 2) sent on 3 October 2003.**

COMMENTARY RE LEAD ISOTOPE LABORATORY CLOSURE

BHP Billiton

It is with much regret that we learn of the decision to close the isotope laboratory at North Ryde. BHP Billiton has had a long and fruitful relationship with the isotope researchers, particularly, lead isotopes, which dates back to the 1980's. Our company continues to use lead isotopes to solve mineral exploration problems, especially in undercover exploration programs. There have been several recent cases, where lead isotopes were used to make fundamental project decisions (which have ultimately saved the company considerable time and money).

We are disappointed and alarmed at the closure of the North Ryde isotope facility for the following reasons:

- Loss of expertise with no other capable alternative in Australia*
- Loss of ability to perform accurate lead isotope determinations for the minerals exploration industry*

BHP Billiton wishes the laboratory to continue so that the important capabilities and expertise mentioned above are not lost from the minerals exploration industry.

Pasminco

Pasminco Exploration and Pasminco Rosebery Mine are regular users of Sirotope's services and we believe that closing the facility at North Ryde would be a retrograde step. Pb isotopes are a useful discriminator of different mineralisation styles in the Mount Read Volcanics of Western Tasmania; they are used to differentiate Devonian and Cambrian systems and can also differentiate between Cambrian events.

Our experience with commercial laboratories indicates that they cannot provide data of the same quality as provided by CSIRO, in particular resolution is not good enough to distinguish between Cambrian events. Additionally the commercial labs do not have the interpretation service that CSIRO provides. The closure of the Pb isotope lab therefore has the potential to significantly increase exploration costs, i.e., the inability to differentiate Cambrian events which could lead to expenditure on prospects that would be downgraded by the good quality data provided by CSIRO.

Teck Cominco

The break-up of CSIRO is certainly a concern to us. It is always surprising when a major government facility such as CSIRO goes through significant changes without apparent consultation with "the client base". Obviously times are tough, and change may be necessary, but some of the changes appear to run counter to moves within Australia to rejuvenate exploration and also appear to ignore the long and successful history at CSIRO.

I have several responses to your questions regarding the Pb isotope facility. My first concern is for project P618 since we have paid to support this project and hope to see some results. Obviously if the project is finished we will be seeking the return of our recent subscription. This however is not the desired outcome - particularly since we've worked to find a suitable test site of interest to Teck Cominco and the project.

Regardless of the motive for this closure, the fact remains that many government organizations around the world are closing high cost analytical laboratories. One of the world's foremost geochronological labs at the Royal Ontario Museum closed a couple of months ago. After general outcry, a solution for this lab was reached by moving it to the University of Toronto. Since there is

already some university involvement in the CSIRO Pb isotope lab, perhaps a similar solution might be possible. Are there any efforts being made to move and preserve the lab?

In terms of our own needs, we have access to a very good Pb lab at UBC so I can't claim that the CSIRO lab is absolutely necessary for us. Having said that, this lab has a different focus to CSIRO and is not a direct replacement.

Please keep me posted on this change and the future of P618.

Western Metals

It is disappointing to Western Metals that the CSIRO isotope facility at North Ryde is to be closed in the near future.

While Western Metals is in receivership with its future uncertain at present one thing that I am sure of is that the Lennard Shelf operations will keep operating and to do this into an extended future significant exploration needs to continue. Part of the work that Western Metals Exploration team has done over the past few years is an extensive study into the usefulness of partial leach geochemistry. Our studies showed that for the Lennard Shelf this partial leach geochemistry could be used to assist the exploration effort by focussing exploration into prime areas. It was with this knowledge that Western Metals decided to sponsor the P618 Project which was to look at isotope discrimination of geochemical anomalies. The Western Metals concept, **which I believe is still valid**, is that if we could rank our geochemical targets by other exploration methods (such as by using isotopes) this would lead to earlier discoveries of hopefully economic zinc-lead resources to be mined and treated as part of the ongoing Lennard Shelf operations.

With the potential closure of the CSIRO isotope facility at North Ryde, this avenue of ranking anomalies is taken from us and may potentially add significant costs to future discoveries ie: instead of drilling better defined targets all targets will need to be drill tested.

It would be Western Metals desire to see the isotope facility remain as there is no equivalent facility that I know of in Australia.

Anglo American

Thanks for alerting us to this - we will do some lobbying.

XStrata (MIM)

As a result of our support for project P618, we have recently become aware that the CSIRO laboratory at North Ryde is to be closed. This letter is written to help you try and reverse this decision.

The North Ryde laboratory has been the leading facility for Pb isotope determinations in Australia for nearly 30 years. This laboratory is one example of a CSIRO facility where there is active, ongoing collaboration with the exploration and mining industry.

Mt Isa Mines (Xstrata Copper Australia) have been actively involved with academic research on the use of Pb isotopes, since their development as an exploration tool in the 1970's. The seminal work "Lead Isotopes as a tool for Gossan Assessment" by Gulson and Mizon is one example of the practical application of Pb isotopes in the exploration/mining. Much of the initial work by Gulson et al in the Mt Isa Inlier, was based on Mt Isa Mine samples. The results from this work allowed major advances in the development of new ore genesis models for the mineralisation at Mt Isa.

MIM Exploration successfully used Pb isotopes to discriminate between Pb-Zn mineralised and non-mineralised gossans in the McArthur Basin, Arunta Block, Pine Creek, Tanami, Olary Block and Broken Hill Blocks. Many academic workers sponsored by us used Pb isotopes in developing new ore body genesis models, one example is Hinman 1994 at HYC (now McArthur River Mine).

Xstrata Copper Exploration is presently contributing to AMIRA project P618, Isotopic Discrimination of Partial Leach Geochemical Anomalies in Covered Terrain. If this project is successful it will provide a significant technological advance for those exploring for ore deposits under cover. The potential rewards for those supporting the project are large. As you would be aware the greatest challenge to

Australian explorers in the 21st Century is to develop effective mapping tools through cover. Without such tools exploration and ore deposit discovery in Australia will become increasingly expensive and therefore uncompetitive. The negatives of this will eventually flow on to the rest of our mining industry.

Mount Isa Mines was also a major contributor to the AMIRA Project looking at Pb isotopes for all major deposits in the Northern Australian Craton. This project developed robust models for age determination and developed software for desktop analysis of Pb isotope data. This development would not have been possible without the major contribution from the North Ryde facility.

Within Australia no other facility is able to measure Pb isotopes to the accuracy required in the exploration industry. This will add to the cost of analyses but more importantly mean that Australia would no longer be in the driving seat of technological development in this field.

Through the Prosser Enquiry, the Action Agenda and support of the Predictive Mineral Discovery CRC the Federal Government has signalled that a vibrant, competitive exploration industry is vital to the health of our mining industry. Under these circumstances it is therefore peculiar that the North Ryde facility should be closed.

We would like you to reconsider the closure decision.

Phelps Dodge

I was very disappointed to here about the closure of this lab and research group particularly in light of there fine efforts over the past years.

Most notable in my mind was their work on the Sedex deposits and the fingerprinting of Pb types in exploration. This approach no doubt has application to other deposits styles where companies want to avoid the many false anomalies associated with a field.

The most limiting aspect to the application of Pb isotopic ratios as an alteration mapper and discriminating tool is our ability to do it routinely and cheaply. I believe CSIRO are developing, with company support, a low cost technique that should enable its wide spread use.

If you consider that the applications of Pb isotopes to date have really been bench tests to prove its usefulness to industry - then it has succeeded beyond expectations. To capitalise on this research investment over the years CSIRO should advance the technology with the aim of providing cheaply available isotopic ratios to the industry - from which a wider range of applications will evolve.

WMC

As WMC is not a contributor to AMIRA P618, I am not very close to the action for the type of analyses involved.

However, I understand that the CSIRO Lead Isotope facilities are not unique in Australia and that there are at least as modern facilities elsewhere (AMIRA comment: while there are certainly machines capable of carrying out the analyses elsewhere (whether they would do so is another issue), the real and unique skills of CSIRO lie in their understanding of critical dissolution techniques prior to the actual analysis and the huge database and software critical to interpretation. Furthermore there is probably no facility capable of carrying out the double spike technique important for ultra-high precision work). I am obviously concerned about the potential loss of expertise through closure of such a facility and hope that the key personnel involved are able to find suitable work elsewhere.

You mentioned two other AMIRA projects (P223E and P685) which WMC has strongly supported. These have involved the CSIRO in completely different areas of scientific endeavour and I understand that Art Raiche's and Jon Huntington's groups are being maintained.

WMC is sympathetic to your concern at the loss of the CSIRO Lead Isotope facility and hope that the P618 project is able to be completed successfully within the resource and time constraints now imposed.

Rio Tinto

Rio Tinto Exploration has in the past used the North Ryde facility. This was admittedly on an infrequent basis, but in some instances the results provided have proved useful in making decisions exploration decisions. Current RTE strategy does not have a large component of work directed towards base metals so it cannot make any commitment to usage of the facility in the immediate future.

While recognising that the current contraction of the industry and the corresponding decline in availability of research funds must force some hard decisions, this facility does represent a substantial investment in both money and intellect and it must be acknowledged that once the facility is closed it is unlikely that it would ever be re-established. In view of both this and the cyclical nature of exploration (in terms of commodities and the "boom and bust" cycles in exploration funding) it is necessary to question the widest possible range of stakeholders to determine whether a permanent closure is desirable from a long term perspective. Questions could include:

- Is the facility truly unique from a world perspective, or are there other places that offer the same combination of analytical precision, expertise in low level analytical techniques and data interpretation?*
- Future developments in geochemistry would seem to be profitably directed at discrimination of "true" from "false" anomalies, increasingly using both transported regolith and water media with low absolute abundances of potential pathfinder elements. This is a field with rapidly developing research, and taking too narrow a view of the potential use of isotopes as being only appropriate to, say, base metal and gold exploration, could be costly. How reliant will any potential breakthroughs be on the North Ryde facility, or can it be substituted?*
- What about disciplines apart from mineral exploration? The facility has in the past been involved in environmental investigations. Have external stakeholders in land management, hydrology, pollution control etc been consulted? What is the extent of their potential usage and would closure compromise any important programmes? Would such external stakeholders be prepared to contribute funds?*

The findings and recommendations of the recent Prosser Inquiry indicate both the importance of the mineral resource sector to the Australian economy (and community) and the need for Government to provide appropriate support to sustain and foster Australia's internationally competitive position within the sector. Against this background it is regrettable to see proposals to curtail facilities that have helped Australia reach it's current status in the World's mineral sector.

Australian Geoscience Council Inc.
The Council of Earth Science Societies in Australia



7 Landsborough Street
Griffith ACT 2603
4 August 2003

Dr Geoff Garrett
Chief Executive Officer
CSIRO
PO Box 225
Dickson ACT 2600

Dear Dr Garrett

Funding for Exploration Research in CSIRO

On behalf of the Australian Geoscience Council, I am requesting that you review, as a matter of urgency, the cuts of ten percent, which were made to the Division of Exploration and Mining's budget in July this year. The Council believes that if this action is not rectified there will be grave consequences for exploration research in Australia.

The Australian Geoscience Council comprises nine societies and associations, has a membership of over 7000 and represents most of the professional geoscientists in Australia. A key aim of the AGC is to promote the geosciences, in the best interests of both our constituent organisations and Australia as a whole.

The Council was shocked by the decision to cut funds to exploration research and innovation because the mining and exploration sectors are crucial for sustaining Australia's wealth. Exports of minerals and metals amount to over \$40 billion per year (~30% of all goods and services) and unless we are able to find more ore bodies by improving our exploration techniques, the wealth generated from our mineral resources will continuously decline.

This situation was recognised by the Australian Government through the establishment of the whole-of-government Mineral Exploration Action Agenda and the inquiry into resources exploration impediments being undertaken by the House of Representatives Standing Committee on Industry and Resources. Both of these studies recognised the importance of research outcomes to underpin successful exploration. Furthermore, the identification of developing our deep earth resources as listed as a National Research Priority by the Prime Minister earlier this year. The words from priorities document are pertinent to this issue.

"Developing deep earth resources

Smart high-technology exploration methodologies, including imaging and mapping the deep earth and ocean floors, and novel efficient ways of commodity extraction and processing (examples include minerals, oil and gas).

Many of Australia's known mineral assets may be nearly exhausted within the next decade. New land-based deposits are believed to be buried deeper in the crust and the deep marine areas surrounding Australia are also largely unexplored. New technologies, such as remote sensing, indicate scientists are on the brink of being able to "see" inside the earth and identify deeply buried deposits."

This situation was recognised in 2000 by CSIRO with the establishment of the "Glass Earth" project to undertake cutting-edge research so that we can better understand and manage our mineral resources. The reduction in funds, imposed this year, will clearly have a major impact on CSIRO's capacity to deliver significant outputs in this program.

We understand that "Glass Earth" and other exploration focused research programs; particularly those based at North Ryde in Sydney, are under threat because of the funding cuts. As a result Australia's research capacities and capabilities, particularly in the eastern states, will be seriously diminished. We are led to believe that the 10 percent cut was made to all Divisions not involved with the new Flagship Programs. However, given the government's \$20 million additional contribution in this year's budget for these programs, the need for the cuts is certainly not clear.

The Australian Geoscience Council believes this situation is most unsatisfactory, and funding should be restored so that CSIRO plays an expanding, and not declining, role in this key industry sector.

Yours sincerely

A handwritten signature in black ink, appearing to read "David Denham". The signature is fluid and cursive, with the first name "David" being more prominent than the last name "Denham".

David Denham
President

cc The Hon Joe Hockey MP
Acting Minister for Industry, Tourism and Resources

The Hon Peter McGauran MP
Minister for Science

13 August 2003

Dr David Denham
President
Australian Geoscience Council Inc.
7 Landsborough Street
Griffith ACT 2603

Dear David,

Funding for Exploration Research in CSIRO

Thank you for your letter of 4 August 2003 to the CSIRO Chief Executive Officer. Dr Garrett has passed your letter on to me as Chief of the Division of Exploration and Mining to respond to your concerns.

As a Division, we appreciate the AGC's strong support for exploration related research - most recently with respect to the Mineral Exploration Action Agenda. As you have pointed out, the exploration and mining industry is crucial to sustaining Australia's wealth.

I also strongly endorse your view that the Division has a key role and responsibility to support the mineral industry especially in the light of declining exploration expenditure - meeting this obligation lies at the heart of our restructuring proposals.

The current changes within CSIRO Exploration and Mining are a response to a series of strategic drivers based on feedback from industry and other stakeholders that have been building for several years. Whilst the current transition coincides with the strategic shift in CSIRO resources to fund the new flagship initiatives, and the Division must meet its budgetary allocation, restructuring is essential to meet the challenges of industry in a dramatically changed corporate landscape.

CSIRO as a whole has made sweeping changes to ensure that the science we do is focussed and relevant. To meet these challenges, the Division's exploration research will be focussing on priority science issues identified through consultation with industry, notably:

- Where to explore
- Recognising ore systems
- Exploring through cover, and
- Knowing what to mine.

To adequately address these research Themes will require a greater focussing of effort and a change in the Division's skills base. As a result, we will be consolidating our exploration research effort in Perth to provide the critical mass necessary to make a major impact on these challenging issues. At the same time, we will manage the transition from the Sydney site over the coming years to ensure that our core skills are maintained and aligned with the rest of the Division's research. We recognise the need to effectively service the exploration industry in the eastern states and the three remaining sites (Perth, Brisbane and Melbourne) will be well placed to provide this service. In Melbourne, the Division will also be well placed to participate in the Victorian Institute of Earth and Planetary Sciences (**VIEPS**) collaborative research and education infrastructure with Victorian Universities and to participate in exiting new opportunities related to the Australian Synchrotron development.

You have highlighted the key role of 'Glass Earth' technologies to the mineral industry. CSIRO remains fully committed to the vision of 'Glass Earth'. CSIRO through 'Glass Earth' was recently co-convenor with Geoscience Australia of the national workshop "Towards Building an Australian **S**olid **E**arth and **E**nvironment Grid" (SEEGrid). The **SEE**Grid workshop showcased Glass Earth technologies for transparent access to spatial and geoscientific data, information and knowledge in a mix of 2D to 3D web-enabled platforms. The workshop was attended by 180 people from a mix of federal and state government agencies, industry, SMEs and universities. It was opened by the Chief Government Scientist, Dr Robin Batterham, and drove forward the messages of using frontier technologies to conduct breakthrough science that achieves a sustainable Australia in terms of its natural, mineral and energy resources.

Similarly, the National Research Priority on 'Developing Deep Earth Resources' is closely aligned with our new research Themes. One of the key aims of the restructuring process is to more closely align our resources with these objectives and we will identify and maintain the core skills required during the transition process. As a result, work in other areas will be reduced.

In the short term this will mean reduced spending on exploration research, however the Division will be well placed to grow from a focussed and consolidated base. In particular, strong support for exploration research from the Mineral Exploration Action Agenda and industry bodies is key to building exploration research on the scale necessary to revitalise the industry.

Once again, thank again for your support of exploration-related research and your views on the Division's future direction.

I would be delighted to meet with you to discuss the matter further.

Yours sincerely,

NEIL PHILLIPS
Chief of Division

cc Dr Geoff Garrett
Chief Executive Officer, CSIRO

The Hon Joe Hockey MP
Acting Minister for Industry, Tourism and Resources

The Hon Peter McGauran MP
Minister for Science

Australian Geoscience Council Inc.
The Council of Earth Science Societies in Australia



7 Landsborough Street
Griffith ACT 2603

4 September 2003

Professor Neil Phillips
Chief of Division, Exploration and Mining
PO Box 312, Clayton South
Vic 3169

Dear Neil

Funding for Exploration Research in CSIRO

Thank you for your letter of 13 August 2003. We appreciate your detailed reply and I am writing to follow up on two of the matters you raised.

The first relates to the activities planned after the proposed restructuring.

The AGC is fully supportive of your four research issues. They form a pragmatic set of themes for mineral exploration research activities, which should align strongly with the interests of mineral explorers. We are also pleased to learn that the *Glass Earth* will be supported and has priority. We believe this project will have long-term strategic importance in our understanding of the Earth and how best to discover and manage its resources.

The AGC is looking forward to details of the projects to be undertaken under each of these themes, and how they will be designed to encourage increased exploration investment in Australia. In other words, what do you plan to focus on, under each of the generalised headings, in terms of actions and research outputs, particularly in the longer-term strategic research programs such as *Glass Earth*?

The second issue relates to the change in the skills base and analytical capacity, especially in relation to the facilities at North Ryde. These laboratories have long been regarded as a de-facto national facility and we believe there would be a serious loss to our national geoscience capacity if they were closed. We were therefore pleased to learn that you plan to ensure that the core skills base will be maintained.

However, we are concerned over the possible decline in the geoscience capacity and capability, particularly in the Eastern States. For example, in the context of people, facilities and locations, can you advise what is planned for:

the rock magnetism laboratory,
the aerial geochemistry and radiation safety laboratory,
the HIAF nuclear microprobe system used for fluid inclusion and mineral studies,
the radiogenic and stable isotope mass spectrometer facilities used in ore systems
studies and for discriminating exploration targets, and
the associated ultra-clean laboratory and sampling and rock preparation facilities?

Several of our members use the laboratories at North Ryde and would appreciate
information on the future plans for these facilities.

We would also be pleased to discuss these matters further, perhaps when you are next in
Canberra.

Yours sincerely

A handwritten signature in black ink, appearing to read 'David Denham', written in a cursive style.

David Denham
President