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Official Committee Hansard

**HOUSE OF  
REPRESENTATIVES**

STANDING COMMITTEE ON INDUSTRY AND RESOURCES

**Reference: Resources exploration impediments**

MONDAY, 12 MAY 2003

ADELAIDE

BY AUTHORITY OF THE HOUSE OF REPRESENTATIVES

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**STANDING COMMITTEE ON INDUSTRY AND RESOURCES**

**Monday, 12 May 2003**

**Members:** Mr Prosser (*Chair*), Mr Byrne (*Deputy Chair*), Mr Adams, Mr Fitzgibbon, Mr Gibbons, Mr Haase, Mr Hatton, Mr Randall, Mr Cameron Thompson, Mr Tollner and Dr Washer

**Members in attendance:** Mr Prosser, Mr Tollner and Dr Washer

**Terms of reference for the inquiry:**

To inquire into and report on:

Any impediments to increasing investment in mineral and petroleum exploration in Australia, including:

- An assessment of Australia's resource endowment and the rates at which it is being drawn down;
- The structure of the industry and role of small companies in resource exploration in Australia;
- Impediments to accessing capital, particularly by small companies;
- Access to land including Native Title and Cultural Heritage issues;
- Environmental and other approval processes, including across jurisdictions;
- Public provision of geo-scientific data;
- Relationships with indigenous communities; and
- Contribution to regional development.

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**Committee met at 9.12 a.m.****GOULD, Dr Ian Geoffrey (Private capacity)**

**CHAIR**—I declare open this ninth public hearing of the House of Representatives Standing Committee on Industry and Resources inquiry into investment in resource exploration in Australia. I welcome everyone here today. The witnesses appearing before the committee today are Dr Ian Gould, South Australian Chamber of Mines and Energy, National Native Title Tribunal, the CSIRO Division of Petroleum Resources, Mr Eduard Eshuys and Roy Woodall AO.

I remind witnesses appearing before the committee today that the evidence you give at this public hearing is considered to be part of the proceedings of the parliament. Therefore, I remind you that any attempt to mislead the committee is a serious matter and could amount to a contempt of the parliament.

I welcome Dr Ian Gould. I wish to advise you that the comments you make at this hearing will not be covered by parliamentary privilege. However, the transcript of your comments will be covered by parliamentary privilege before it is released. I would invite you to make a short opening statement before we proceed to questions.

**Dr Gould**—Thank you very much, Chairman. I will try not to repeat what I have put in writing, but I would like to draw attention to the relatively narrow, or perhaps I should say focused, nature of my comments. I would like to particularly address the first two terms of reference of the inquiry, which relate to resource inventory and to the structure of the industry, or perhaps one should say the restructure of the industry.

I should make it clear that I am not here representing any particular body, but am a long-term player in the industry. I do hold chairmanships in quite a number of industry bodies, CRCs, the Resource Industry Development Board, and I am a director of the Australasian Institute of Mining and Metallurgy, but I am not representing them here, and that is something I would like to make quite clear.

When we look at this question, we take as granted that this is an extremely important industry for Australia in the future, as of now. It is not sunset. It produces around \$50 billion of export earnings and it is vital in order for us to maintain living standards in the future. Therefore, we have to look long term at where this industry will be and, clearly, if we do not see exploration continuing at a rate that can replace depleting resources we will not be achieving that sustainability. Sustainability involves not only social and environmental issues but also economic sustainability, and we do need the resource base to do that.

There have been some major changes in the exploration scene which have made that less probable in the present scenario than it was in the past. The restructuring or globalisation of the industry, which is not something that I believe in any sense one should be fighting against—I believe one should be working with it—has brought, though, some negatives for the exploration industry.

I would like to focus my attention on the big corporations. I did work for many years for CRA and Rio Tinto and, in fact, I headed up the exploration division of CRA in the critical period in the late eighties and nineties when that organisation had a very large budget to spend, mainly in Australia. The result of all the rationalisation, amalgamation and globalisation of these corporations is that they now spend a very much smaller proportion than they used to in exploration in Australia. Much of this exploration generated immense quantities of data and provided the base for other corporations and smaller explorers to use later. They were immense generators as well as direct explorers and seekers of success in their own right. We are now seeing that this has altered.

At the same time, these large corporations are still deriving very large proportions of their profits from Australia. The three largest mineral corporations in the world are—not necessarily in order—Alcoa, BHP Billiton and Rio Tinto. I believe that each one of those derives the largest component of its profitability from its operations in Australia. There have been changes in words and categorisation, but that is what it boils down to.

Resources are being depleted, quite legitimately, in the pursuit of profit and I find nothing wrong with that. It employs Australians, provides royalties and all sorts of good things—plus exports, of course, above all. But we really do need to see the large companies, the large corporations, in their new form—less of them; larger—putting money back in a way that will guarantee there will be resources for this country to continue to utilise in 10 or 20 years time, and further down the track. That is my particular focus and concern.

Much of the exploration being done in Australia at the moment is near mine, as it is called. There is no doubt that greater returns are available from working near mine than they are from taking the high-risk greenfield exploration in hand. If you get the last bit of the resource that you know about—and that is a worthy thing in its own right—that can sustain you for an extra few years, but in 10 years time the capacity to do that from that resource will be over. If money has not been put into long-term greenfield exploration in that time frame, in 20 years time we will not have an industry of the type we do now. I believe that means we need very much in Australia to focus on methods of encouraging greenfields exploration. Others will talk—and I am also a very strong supporter of it—about the rebuilding of the medium sized mining company in Australia which has been subsumed and amalgamated over the last few years. They were very strong explorers. We need to encourage the small explorers to build up to take that role; we need to encourage them to explore. To do that, we need to help them with their capital base. But that still leaves us very much with the large corporations.

What are we doing with a few large, globalised corporations who will make their decisions in exploration on a worldwide basis? Their interests and Australia's interests are often the same; they are often identical. More often than not they are good corporate citizens, but there will be and there are times when it suits them to derive their wealth from the exploitation of resources that are depleting in Australia, but look for the replacement of resources in other countries. That suits the corporate view and it is a responsible corporate position. It is not a good position for Australia to take that view. If the replacement of resource in Australia is in West Africa, that is not going to help Australia. Therefore, I believe we must look at methods of encouraging the large corporations to carry out greenfields exploration on a greater scale than they are now doing. I remind the committee—I guess I need not—that it is at a much reduced level from what it was only five to 10 years ago.

How should we do this? I would suggest that it is not by putting obstacles in the way. It is not by being parochial or paranoid. It is not by opposing globalisation per se. It is, I think, achievable in two ways. One of them—although it sounds a little trite—I have observed from the other table, works very well. That is when—hopefully on a multilateral basis, with the support of all parties, which does occur from time to time in my experience with mineral matters—basically from prime ministerial level to the heads of the major globalised corporations, the message is brought through: take Australian resources and provide wealth for Australians et cetera, but depleting those resources has a commensurate requirement to take action to replace them. As I say, if that is conveyed from a high enough level to a high enough level, my experience is that it is effective.

Secondly, and perhaps more to the point, I believe we need to look at the taxation regime which rewards and encourages greenfields exploration by the major corporations, as distinct from work around the existing ore bodies. There is an overt plan—not covert but very much on the table—to encourage them to look elsewhere, to make the discoveries that will be exploited in 10 to 20 years time and keep the industry going.

What we are doing now—this is coming up many times to the committee—is really exploiting ore bodies that were discovered or recognised—bauxite, alumina, iron ore, coal—20 to 30 years ago. We need to start that process running all over again. Chairman, that in summary—and I hope it has not been too long—is my proposition that I would like to bring to this inquiry. I believe the major corporations need to be engaged in a much higher level of greenfields exploration if the industry is going to be sustainable in the future and take its proper place.

**CHAIR**—Thank you. I note your comments in regard to the involvement of government and, I presume, government agencies as well. Do you have any examples of how the South Australian Resources Industry Development Board has influenced South Australia's mineral exploration activity?

**Dr Gould**—The development board is an advisory board to the minister and it is now under ministers of both the coalition parties and of Labor. It does not make policy in its own right; however, it is very much encouraged. For instance, the board has worked hard for the continuation of the data generation in the TEISA program and the high-accuracy airborne aeromagnetic surveys. It has also suggested changes in taxation regimes to the minister and generally proposed mechanisms that would make the department in South Australia more effective.

**CHAIR**—On the question of the geoscience data, what is your view in regard to the state data and Geoscience Australia? Should it be held by one body instead of almost two different areas? Can we do it better?

**Dr Gould**—The answer is that we can do it better, but the preoccupation and the priority that I see is that we do it at all and that we keep the coverage at a very high standard up. Mineral companies can easily exploit data that is generated from two sources, so I do not see that it is a huge issue. It would be perhaps more efficient if it were all under a federal mantle, but I think there are many of us who would fear that, if that brought a disjunct into the whole proposition, we could end up with something more efficient ultimately, but which actually had a stall in it. What is happening there with those surveys has been a great advantage to the industry.

If I could perhaps unfairly throw in a little bit of an answer to your last question as well: in South Australia this work is particularly important because of the cover over the highly prospective geology. One of the things—in fact, the primary thing—the Resources Industry Development Board has harped on very strongly is that in this state the opportunity exists under cover to discover some of the truly giant ore bodies of the world. But for the accident of the border with New South Wales, the Broken Hill ore body is in South Australian geology, and that is one of the great ore bodies of the planet; Roxby Downs is also. So this state has a particular advantage to gain from this type of airborne work and other work it sees below the cover into that prospective geology, where one discovery of that nature can make a major economic difference to the economy of the state.

**Mr TOLLNER**—Dr Gould, I apologise for arriving late for your submission, but I have read what you have sent through and I congratulate you on it. I would like to draw on some of your 35 years of experience in the industry and ask you if you have had any experience with the Northern Territory Aboriginal Land Rights Act—

**Dr Gould**—Yes.

**Mr TOLLNER**—and how that impacts on exploration. Is it similar to native title? Is it an easy process to get land access through land rights?

**Dr Gould**—I have certainly seen the relativities between the two systems and, in fact, before native title came into existence, they changed a lot over the years. Before native title legislation it was regarded as being quite a major impediment to exploration. Subsequent to native title and with some changes with the way that the land rights act is administered, particularly in practice, I have seen it turn to being considered a superior way of going to some of the native title problems.

I really do believe the industry very much accepts that traditional owners have rights under the Aboriginal land rights legislation or the native title legislation. They respect that, and there is a genuine belief in that now, but there is no doubt that both of those acts do slow down exploration and make it more difficult. But the general feeling in exploration—remembering that I am out of the direct firing line now—is that in the Northern Territory things are getting relatively better rather than worse.

**Mr TOLLNER**—How has the ILUA process assisted explorers with challenges to the native title legislation?

**Dr Gould**—There is a fairly widespread belief, and some evidence to support it, that dealing directly with the communities, with the traditional owners, through the ILUA processes will get you a much more rapid and sustainable agreement. The processes under the Native Title Act particularly are so tortuous—I am sure the committee has heard this from many people—that delays are almost interminable. There are multiple claimants involved, often disputing with each other who speaks for land et cetera. You have Aboriginal heritage issues that are thrown in on top of that, so the whole thing slows the process down to a point where native title fatigue sets in. I have seen that in a very big corporation that I was involved with at one stage. They did, in fact, get so fatigued that the major discovery was sold off because people became so frustrated.



The ILUA process seems to be a better process but it still has to deliver major outcomes. It looks better, we are seeing some light at the end of the tunnel, but it is not there yet.

**Dr WASHER**—Dr Gould, thanks for your presentation and the detailed written submission. In your perception, why are the major players not exploring in Australia? Why are they favouring overseas exploration in preference?

**Dr Gould**—There is a question as to whether they are exploring very much anywhere, as well. I think that overlies your question.

**Dr WASHER**—Sure.

**Dr Gould**—There is a list of reasons. Perhaps I can go through them. One of them is that many of the major corporations see that the reason for difficulties in the industry, prices being low et cetera, is that there is too great an inventory of resources. They will not often articulate this in public, but it is a fact, and well known within the corporations. Therefore, exploring and discovering additional resources—some of which they would not use themselves but other smaller companies might utilise—just means that there is more of that commodity around. It drives the price down and that is, therefore, not a good thing to do. In some cases, certainly not all—I do not wish to sound unflattering but again I think it is a fact—we have seen management take a very short-term view. They have learned quite quickly that you can make quite a big difference to your profitability by cutting your exploration right down—and your R&D and other activities as well.

Suddenly your earnings go up, management feels pretty good about it and there are rewards that flow with it. I think short-termism is also part of it. Many of the corporations see that it is cheaper to buy resource now, rather than to find it themselves, but there is of course only a limited time you can buy the fruits of the work of others, if there is no more fruit being produced.

In terms of overseas activities, there are many areas now where it is easier than in Australia to get on the ground and explore. Some of those issues do relate to native title and equivalent issues. Getting on the ground in Australia is difficult but we have other advantages which are significant, too, in terms of the safety of investment. We have an excellent history in Australia of low sovereign risk et cetera. It is a cocktail of things.

At the moment you can buy resource cheaper than you can find it. There is a belief that we do not need lots of new resource anyway when a lot of markets are oversupplied in any event. It is easier to get on the ground in other places. Finally, we are seeing the top management of these corporations frequently located in other places. They are not Australians. I do not wish to sound jingoistic about this, but you tend to work where you are comfortable, where you know people, where your networks are. That does not help Australia when the first thing they think about is another country or group of countries and their advisers the next level down are the same. We are losing that sort of natural in-built priority that companies that were Australian based and not so globalised had. That is something I believe we have to live with and be successful with.

**Dr WASHER**—You mentioned, too, airborne geophysical exploration and surveys. Have the areas that you mentioned that you see as probably prime sites been fairly covered by these surveys?

**Dr Gould**—I think there is a lot of additional scope to do more work. The reason for that is that geologists, regrettably—and I, being one, can say this—get it wrong quite often, and if one tries to take too close a view of where one is going to be successful and where one is not, often the big discoveries are not made. Many of the areas of conventionally agreed high prospectivity have now been covered, and they can be covered with increasing sophistication, so it is not, ‘The job’s done, and that’s it forever.’ One can get more sophisticated. But there will be areas also where additional coverage will give rise to theories and opportunities will be identified, so I do not think the job is ever done, to be quite honest.

It is a bit like the Harbour Bridge: you keep going over it again, and you keep getting better, and you do not leave a bit of the Harbour Bridge unpainted because that is not the bit that normally rusts. It is a bit like that. There are not gigantic unknown conventional gaps in the plan coverage. There are gaps in the coverage that exists now, but there are surveys planned, with a few exceptions, which would cover conventional prospectivity. But we should not be concerned just about the conventional.

**Dr WASHER**—I think the flow-through shares you mentioned are more designed to assist the smaller prospector. From the Canadian experience, have they managed to sort out the roting issues that the Treasurer naturally would be spooked out about?

**Dr Gould**—I understand that they are under control and, of course, it is one of the elements—some would say the major element—that has made Canada now the No. 1 explorer in the world. Again, I would have to say that I am back a little bit from the front line now, but I think the overt roting has been controlled. I certainly think it is controllable in this country as well, but there is always that sort of risk. With the larger corporations, as I was intimating, if you incentivise them, encourage them to do greenfields work with a bit of stick and carrot, even there if you are not careful you will get some abuse.

**CHAIR**—Just a while ago you mentioned land access problems. You would be aware, of course, of the chart that is put out—the world investment risk survey of last year. I note with interest that Australia is basically up there at No. 1. The only things that keep us there are sovereign risk, infrastructure and those sorts of things. The disturbing aspect, though, is that if you look at land access, green tape and land claims we are down alongside Brazil, Mexico, Malaysia, Vietnam, Argentina, Chile, Peru, the Philippines, Russia, Indonesia and PNG. They are in the areas of, specifically, land access, green tape, and land claims. Given your experience and evidence just a while ago that in a globalised world these decisions are made from boardrooms in London, and perceptions carry a fairly heavy weight, what do you consider we could do to overcome that bad rating? We are still there, but not for the important reasons. That bad rating is not even a perception. When you read the figures, it is fact. What could we do to overcome those land access, green tape and land claims shortcomings?

**Dr Gould**—I wish I had the wisdom to answer that and give the right answer. It is a very difficult balance between social requirements and the needs of the industry. I think what the industry has learned, over the last 10 years in particular, is that, if it seeks to override community

concern and environmental concern, it does so very much at its own peril. We saw a situation which is truly ludicrous arise not that long ago, where mining really attracted most of the environmental objection in Australia, although in the quite independent studies that have been done in the state of the environment reports by both the federal and state governments, and of both persuasions, mining hardly rates at all. It is very hard to find it. Of all the environmental problems besetting this country, mining really is not one of the significant ones at all, yet we attracted all this criticism.

What I am coming to is that, if we try to set these social concerns and perceptions aside, we end up with even more public antagonism towards the industry, so the industry has learnt that by listening to what public concerns are—and sometimes the industry might not think they are legitimate but they understand the public community has a right to voice those concerns—they have been able to achieve much more than they did before. The unfortunate problem, the other side of that coin, is the one you refer to. There is now so much green tape and native title issues surrounding the industry, which it really does feel very uncomfortable about pushing too hard against for fear there will be a regression—mining being a big, bad thing to do—that we are in a stalemate.

Not many people will perhaps see it that way or put it that way, but I believe there is a bit of a vicious circle here. If the industry tries too hard to overcome those problems, it immediately becomes regarded as a villain, and, if it does not, the logjam does not shift. That is to some degree where we are now. How do we overcome that? More efficient processes are clearly needed. More than anything else, if there was one opportunity alone to fix it, I think it would be the imposition of some very clear time lines. As I say, the industry is not averse at all to listening to legitimate social and environmental concerns, but, when they are capable of being spread out over time frames that are approaching the geological, that is when we end up with ratings such as that one, and I think it is the time that it takes, as much as the absolute outcome in terms of land access, that we need to tackle. I would strongly put that view.

**CHAIR**—You mention in your submission about being a good corporate citizen. Do you think the mining company is a good corporate citizen? If not, what can it do to improve it?

**Dr Gould**—It varies immensely from corporation to corporation. Some, of course, see that this is a true competitive advantage. If they are regarded as a good corporate citizen, they will get preferred access to land, they will get in many ways a preference when dealing with Aboriginal groups, the environmental movement will have a higher level of trust—all those sorts of things. It brings its own rewards, but the question is: what should they do about that? I believe that when you are utilising Australian resources, you have complementary obligations, and they should be focused at replacing the resource base in one way or another. That means that you put your research in this country. It means that you headquarter a lot of areas which require human resources in Australia. I am not about to suggest something that is illegitimate and a subsidy, or even a parody. I am suggesting that in Australia we have such high levels of recognised expertise in the minerals industry, built up over many years, that we can legitimately call for these corporations to base a lot of their intellectual effort in this country. We have seen far too many research organisations and exploration organisations fade from our landscape in the last 10 years.

I think that using the people is a very strong example of doing the right thing. I keep getting back to the same point. A good corporate citizen does not just take and make a profit from a diminishing resource. They do what is required to replace it, long term, and that means greenfields exploration. People, I think, is the short answer to your question. If the larger proportion of profits come from this country, and we genuinely have the expertise here, there should be a major focus on doing things in Australia, whilst collaborating to get the best overall result with anyone overseas, because that is efficient and proper behaviour.

**CHAIR**—Thank you very much for your evidence here today. I am sure we all found it very interesting.

**Dr Gould**—Thank you for the opportunity.

**CHAIR**—Is it the wish of the committee that Dr Gould's evidence presented today be accepted as evidence and authorised for publication? There being no objection, it is so ordered. Is it the wish of the committee that the submission by Roy Woodall dated 24 March 2003 be accepted as evidence and authorised for publication as submission No. 108? There being no objection, it is so ordered. Is it the wish of the committee that the supplementary submission by Mr David Watkins dated 1 April 2003 be accepted as evidence and authorised for publication as submission No. 109? There being no objection, it is so ordered.

Is it the wish of the committee that the submission by Mr R.J. Morrison dated 6 March 2003 be accepted as evidence and authorised for publication as submission No. 110? There being no objection, it is so ordered. Is it the wish of the committee that the supplementary submission by the University of New South Wales dated 23 April 2003 be accepted as evidence and authorised for publication as submission No. 111? There being no objection, it so ordered. Is it the wish of the committee that the submission by the Department of Industry, Tourism and Resources dated 12 March 2003 be accepted as evidence and authorised for publication as submission No. 112? There being no objection, it is so ordered.

[9.46 a.m.]

**SUTHERLAND, Mr Phillip, Chief Executive, South Australian Chamber of Mines and Energy**

**YATES, Mr Keith Robert, Executive Chairman, Adelaide Resources Ltd**

**CHAIR**—Do you have any comments to make on the capacity in which you appear?

**Mr Yates**—I am a councillor of the South Australian Chamber of Mines of Energy.

**CHAIR**—I ask you to make a short opening statement before we proceed to questions.

**Mr Yates**—Before making my short opening statement, I seek leave to table a submission from Adelaide Resources, of which I am the executive chairman. If you are in agreement, after presenting the Chamber of Mines and Energy presentation and answering questions to the submission, I would like to table the submission from Adelaide Resources and speak to that.

**CHAIR**—That will be fine, time permitting.

**Mr Yates**—In the chamber's submission, what I would like to address are the two terms of reference: the access to land, including native title and cultural heritage issues, and the environmental and other approvals process. The legislation in this state in relation to native title is probably one of the most progressive in the country. This is part B of the South Australian Mining Act. The advantage of that legislation is that people in the exploration world are able to receive their grant of title, with the obligation to negotiate with the Aboriginal authorities. As a consequence, the companies feel secure in receiving their title without delay, but with the overriding obligation. That is an advantage over other legislation in Australia, some of which is still going through the process of being amended.

In essence, the onus is thrust upon the parties to negotiate. That is a great advantage, because it means that people get around a table and talk about the issues and try to sort them out. In addition, as a result of recommendations from committees and task forces here in South Australia, we have moved down the track of negotiating—with strong input from the South Australian Chamber of Mines and Energy—an Indigenous land use agreement. That is still in the process of being negotiated, but is well advanced, and the parties are committed to a course of action which will, I think, see something whereby regional template agreements are negotiated here in South Australia. That obviously has the express purpose of short-cutting the time that it takes to negotiate agreements—the previous speaker talked about time being a very important issue in the whole process of exploration—and, secondly, ensures that the parties feel comfortable with the provisions that are incorporated in those agreements.

Over the past 10 years a lot of debate has taken place about the various issues and, in South Australia, we feel confident that that debate is coming closer to resolution. We see it as a major step forward if regional template agreements can be negotiated and used in a far more efficient way than the current negotiating process. The South Australian Chamber of Mines and Energy

has been very instrumental in pushing this line, and it is to their credit that they have been able to build up a relationship with Aboriginal authorities whereby there is a very free and ready interchange of ideas and dialogue.

Raised in the submission is the whole question of multiple land use and parks. South Australia has 25 per cent of its area under parks in some form or other. There are two forms of parks here in South Australia. There are single proclamation parks, whereby exploration and mining are not permitted, and multiple land use parks, where exploration and mining are permitted with the approval of the minister of mines and the minister for the environment.

The debate about multiple land use in this state took place in the early 1980s. At that time it was a landmark piece of legislation, which we in the industry—and I think most of the people involved in the parks system—believed was a great step forward, bearing in mind that mining does not disturb large areas of the country. It generates point sources of wealth, and there has to be a way of being able to work with all of the demands in the environmental area whereby multiple land use, with the sensitive operation of exploration and mining companies, is an effective process to see exploitation of resources within these large areas which are exemplary in this state.

We see it as very important from a sovereign risk viewpoint that we have in place legislation that allows us to operate sensitively in these parks, but all the time protecting areas which might be regarded as being totally in the national interest. When you have large areas, as we have in this state, it is very important that we ensure that the parts of it which are not iconic, you might say, are protected, but the remainder is available for sensitive operations of exploration and mining companies. They are the two points I wanted to emphasise under the submission of the South Australian Chamber of Mines—unless Mr Sutherland has anything to add to that.

**Mr Sutherland**—In respect of the ILUAs, we are quite optimistic that we will be in a position to sign at least one if not two ILUA regional templates before the end of this year. We are quite excited and encouraged about that. To comment about parks, there is a tendency of late for parks to become something of a political football, which is really quite unfortunate. It is sending the wrong messages to the global investment community. Our view is that, rather than blanket bans of exploration and mining, all applications should be assessed on their merits. That is all I wanted to say about that.

**CHAIR**—How do you overcome that perception? Once you put a label, ‘This is a park,’ upon the community—I am from Western Australia and we are starting to get the same problem—how do you overcome that community perception that a park is multiple use but will still gain some use as a park?

**Mr Sutherland**—It is about keeping the community fully informed. That is from the inception of the declaration of the park. There are many parks in South Australia that were declared, but not for environmental reasons. Essentially, they were tracts of land that the government certainly did not know what to do with and so they were proclaimed parks. It seems in the mind of the community at large that all parks are there because of environmental reasons. That is not the case. But to answer your question more fully, it is a case of government, industry, the community and the environmental movement working closer together to get the messages across that mining and the environment can work side by side in a very sensitive manner.

**Mr TOLLNER**—You may have guessed that I am from the Northern Territory. We have a national park up there called Kakadu. Here is an interesting thing: I have talked to a number of people who have suggested that Kakadu would not exist if not for the mining company and their employees who lobbied to have it created as a national park. Now it seems to have turned the full 180 degrees, and they are saying, ‘How the hell can you have a mine in the middle of a national park?’ Are you concerned that this is one of those sacred cows, where you could possibly do yourself more damage as an industry by even contemplating the issue? Politics always amazes me: you never let the facts get in the way of a good story. Do you have any concerns that you are maybe cutting off your nose to spite your face in saying that you think parks should be looked at?

**Mr Yates**—When I spoke earlier on, I was wearing a South Australian hat because of the fact that, fortunately, in this state we did address the issue of multiple land use 20 years ago. The concept of multiple land use was debated in parliament here and we finished up with the system we have now, where some parks permit mining and others do not. In other parts of Australia we have national parks where mining has never been on the agenda and that is a tall order because it means a total reversal of the concepts that were invoked at the time those parks were proclaimed; whereas here in this state we do have in place the concept of multiple land use.

I believe the whole concept of multiple land use deserves application wherever it makes a lot of sense to do so. Many parks in Australia, as Mr Sutherland pointed out, have been proclaimed largely because they have been quirks of history rather than because they were hand-selected for their geographic uniqueness. As a consequence, the whole process of selection of parks here in Australia was not done on a terribly scientific basis. Rather, it was done sometimes in a deliberate move to protect certain unique geographic features that would have been damaged if it were not for the fact that they were falling within an area which could be proclaimed quickly in the time. There is a real need for government to address the whole question of multiple land use on an Australia-wide basis. But, of course, I do agree with you that it is very hard to overturn parks that were proclaimed for good reason in the past without any contemplation of multiple land use.

**Mr TOLLNER**—Following on from that, I was talking to some people from the Coal Industry Association a little while back and they were saying that the mind-set of people in regard to the coal industry is dated 50 years ago. The public perception is that there are whole heaps of men getting very black and dirty and it is a filthy industry and that sort of stuff. They said the perception is nothing whatsoever like the reality. In your experience, do you think companies are doing enough in the area of community education about the resources industry? If not, how do you increase their involvement in this area?

**Mr Yates**—This is a debate that we, at various levels in the industry, go through all the time because it is very important. We believe that the community perceptions about the industry, especially in relation to the environment, are erroneous. But reversing the thoughts of the public is a major thing; it is like turning around a battleship within the space of 100 metres. Really, we somehow do not seem to be able to get the press that is required or the public dissemination of knowledge that is required to reverse public opinion in these areas. Somehow or other we just fail. We have attempted in the past to do it and we just do not seem to be able to do it very effectively.

What we believe now is that it may be possible to get the message out with a different modus operandi than trying to get it out to the public via the media. There are ways and means that I know our Resources Industry Development Board is looking at whereby we may be able to disseminate information about the way we operate to people who may influence public opinion. By competing in the media I do not think we are very effective at all. I am not sure we ever will be.

**Dr WASHER**—Thank you for your presentation. I thought it was great. There are two issues I would like to take up. Obviously you feel native title is, among states at least, one of the most successful of all, and that sounds great. Once the title is issued to the company and they negotiate on native title with native people, what is really looked for then to be achieved to sell off that title? What process then continues? What do the government expect before they sign off on the title totally?

**Mr Sutherland**—The government does not really expect too much because ultimately it leaves the negotiation to the parties involved to resolve the issues which are paramount to native title parties. Some of the issues that are addressed are, firstly and very importantly, heritage matters; secondly, how the company intends to undertake its work; thirdly, the company's instruction of its people on Aboriginal cultural matters and generally ensuring that anything of a cultural or heritage nature is well and truly understood by the companies, and protection is paramount in the process.

In South Australia these agreements are what we call disjunctive. They do not go beyond the exploration stage. The part 9B agreement here in South Australia is restricted to the preproduction stage. Obviously, given success in exploration, there is a requirement to renegotiate. That is the way the legislation is structured.

**Dr WASHER**—Multiple use of parks is terrific; it is a great concept. Tell me, though, if I were a mining company and I went into one of these multiple use parks and wanted to make a claim, what environmental hurdles would be put in front of me? What sorts of costs would I anticipate? I know it is going to be variable. Are they prohibitive in terms of the amount of exploration? What sorts of things do we need—environmentalist people on the ground? What sorts of expectations does the government have? Are they realistic in terms of the environmental assessment?

**Mr Yates**—I will move to put on an Adelaide Resources hat now. As a company that has operated in parks here in South Australia under the multiple land use dual proclamation arrangements, we have found that we have been able to operate very effectively, while at the same time committing to undertake and exceed all the requirements of government. For instance, for clearing of tracts to access drills, under the arrangements we negotiated with not only the department of mines and minerals but also the environmental inspectors and National Park rangers, and it was decided to cut off the vegetation above ground level so that the rootstock was not disturbed and that the access would be by that means. Two years later, of course, the vegetation is half the height it was originally.

We see that there are excellent ways of cooperating with government to operate in these parks. To date I cannot say that the conditions have been onerous. We have exceeded them in every instance and the cost has not been excessive either. There may be other examples where people



will say that is not the case, but from Adelaide Resources' viewpoint we cannot argue that it has not been a very effective process. Indeed, the company has received environmental awards for its efforts. In my experience we can work very cooperatively with the requirements of government in doing this work. I believe that rehabilitation of any damage that we do is more than feasible within acceptable time frames.

**Dr WASHER**—What public acceptance have you had to that? Have you had much resistance?

**Mr Yates**—No, we have not had resistance, but I would have to argue that we have not had accolades either.

**Dr WASHER**—Fair enough.

**Mr Yates**—I believe that all we can really do is our level best to be good citizens and hopefully the accolades will come. The worst thing, of course, would be the opposite. If it is neutral, I guess we are satisfied.

**Dr WASHER**—One thing mentioned earlier on was the reluctance to enter this debate too heavily because it could be counterproductive. If you were to be productive, rather than counterproductive, would education of people in power currently, and certainly getting into schools and involving schoolchildren in this process, be productive?

**Mr Yates**—It is paramount. The next generation of adults has to understand our industry better than the current generation. The best way to do that is to educate the up-and-coming generation. As well as that, one of the important things we have found is that people in the regional communities, who are very close to what we do and see what we have done, endorse it to the hilt. That is very satisfying for us but, of course, they are a small proportion of our population. Somehow or other we have to get the message from the regional communities back into the urban communities that what is happening is very acceptable. Education of the community at large is still a very important issue for the mining industry, not the least of which is how we receive endorsement for our environmental efforts.

**Dr WASHER**—That is beaut. Thank you.

**CHAIR**—How important is the geoscience precompetitive data that is provided by the state and Geoscience Australia to your members? Can it be improved?

**Mr Yates**—It is very important if we are to stay up there in the key exploration destinations of the world. Unfortunately, we have slipped to No. 2 now.

**CHAIR**—How do we get back to No. 1?

**Mr Yates**—I will talk about that if I get a chance on the second submission. We need to be able to show, especially to the large global corporations, that we are intent on continually improving our geoscience databases. Ultimately, if we can continue to improve our databases we are going to highlight Australia as a place with the prospectivity that we all know it has. We do not want to see that slip. It is all about continuous improvement.

At present in Australia we have a lot of these geoscience databases generated by state and government authorities but many of them do cooperate very effectively with Geoscience Australia. Wearing a South Australian hat now, the South Australian government cooperates very well with Geoscience Australia. There are some great programs going on as jointly organised programs of geoscience database gathering here in South Australia, not the least of which is the very prospective Stuart Shelf where, of course, we already have the world's giant Olympic Dam mine. Obviously, the two government organisations are intent on seeing that we find another of those. That would be a great step forward for South Australia.

I do not think we can let up on that. The previous speaker talked about the fact that, if technology keeps on improving, our ability to interpret that data keeps on improving, so we have to keep abreast of it and demonstrate to the world that Australia is an important destination and that we are intent on keeping it there.

**CHAIR**—Having the two governments that you mentioned in this area, are we wasting any money on reinventing the wheel in certain areas, rather than bringing it all under one umbrella, provided we put the same amount of money in?

**Mr Yates**—That is deserving of investigation. One of the things we find is that certain state government organisations in Australia are more aggressive on the geoscience precompetitive data than others. Western Australia has not been as aggressive as some other places because 70 per cent of Australia's mineral exploration takes place in Western Australia. Western Australia has not seen a great need to pump-prime the system, I guess. I think it is important for the whole of Australia. Of course we have seen a reorganisation of Geoscience Australia. Many of these activities that Geoscience Australia used to undertake—regional mapping and regional data gathering—have been changed, such that the organisation has a different modus operandi now.

**CHAIR**—For the good or the bad, in your view?

**Mr Yates**—It was a shame to see Geoscience Australia change its modus operandi. I am not decrying the work that Geoscience Australia does now, but I do not think the ceasing of the activities it was doing back then when the changes took place necessarily meant they were no longer relevant to Commonwealth government activity.

**CHAIR**—Thank you. Colleagues, any further questions? We now have some time for you.

**Mr Yates**—Please pass these around.

**CHAIR**—You are presenting the Adelaide Resources submission?

**Mr Yates**—Yes.

**CHAIR**—I will table them. I will have them put in place in a moment as a submission.

**Mr Yates**—Thank you.

**CHAIR**—Please proceed.

**Mr Yates**—The proposition in this submission is that by far the greatest impediment to increasing minerals exploration in this country is the inability of publicly listed companies to raise the substantial levels of risk capital necessary to reverse the alarming down trend in minerals exploration since 1996 and, in keeping with the previous speaker, the substantial reduction in global exploration expenditure resulting from the merging of the world's larger mining companies to form mega mining companies.

While it is important to address the issues of land access, precompetitive geoscience data and geoscience education and the like, improvement in these areas will not arrest the dramatic slide in expenditure and the disturbing decline in discovery rate in Australia. There is an urgent requirement for government to institute fiscal measures to stimulate investment and exploration, especially in the greenfields area of exploration of the process. I am sure the committee has heard lots of attempts to define greenfields exploration. I have made an attempt in this submission, which I will talk to in a second.

The urgent requirement for government to institute such fiscal measures to stimulate investment can be achieved by providing taxation incentives to investors in non-profit-generating exploration companies. I guess the flow-through share scheme that has been successful in Canada has been mentioned time and time again and, as the previous speaker mentioned, contemplation of increased tax deductions for greenfields exploration, which would apply on an industry-wide basis. In our view no other single measure or combination of measures has the capacity to turn the tide within the necessary time frame.

In Australia we have seen a decline in minerals exploration from a peak in 1996-97 of \$1.14 billion to \$641 million in 2001-02. That is a fall of \$507 million or 44 per cent—a dramatic slide in anybody's view. Expenditure in 2001-02 was the lowest current dollar result since 1992-93 but, more importantly, in constant dollar terms the lowest level of exploration since 1978-79. Really, it is by all accounts a very fundamental decline in exploration.

In gold, of course, the decline has been even more dramatic. We have seen a 54.5 per cent drop in current dollar terms from \$728 million to \$331 million. This is clearly linked to a pronounced decline in the number of gold discoveries and a declining production which is becoming apparent after the predictable time lag. You will notice in the submission a histogram with a graph showing how the gold production is beginning to slip as a result of the decline in exploration. Once again, after being the world's primary destination for exploration, we have slipped to No. 2 spot behind Canada. On the global scene there has been an equally more dramatic fall in exploration to \$1.9 billion in 2002 from a peak of \$5.2 billion in 1997, a 63 per cent slide.

What are the reasons for this global decline? The merging of the world's larger mining companies into mega mining companies has seen a reduction in their combined global expenditure. Weak prices back in the 1998-99 period are beginning to slowly improve. More importantly, there has been depressed investor confidence in the speculative sector of the stock market, which has greatly increased the problem for junior companies to raise equity capital. Lastly, of course, those junior companies are also competing with other areas of risk capital, such as information technology, biotechnology and telecommunication for risk capital.

I mentioned earlier on the decline in global expenditure by the megamajors. I quoted a couple of examples there from Davidson in a PDAC conference earlier this year, and perhaps the best one to quote is one that is close to home, when Newmont and Normandy merged. Previously they had combined explorations budgets of \$US111 million. Post merger that total budget had dropped to \$US73 million. If you take those mergers—and there have been more than 10 of them—you see the impact of those combined budgets being reduced, which has had a fundamental impact on worldwide exploration. All of the companies I mentioned in the submission are operating in Australia.

I would like to address now how juniors operate with majors and the role of the junior. Junior companies undertake the all-important greenfields exploration. They often take the role of the companies that seed the earlier stage exploration and undertake the high-risk work which brings forward exploration projects to the stage where there is drilling that can be undertaken to define, or otherwise, resources and reserves. Much of the greenfields exploration we talked about earlier this morning is seeded by junior companies; even more so since the majors have receded to what we call brownfields exploration, exploring around their mine sites. In the process, the majors' contribution to greenfields exploration has declined.

Greenfields exploration is crucial to Australia's discovery of the next generation of mines. Even the world-class deposits will come from this area of activity. It is crucial that we ensure that the work is undertaken, not only to replace the depleting resources but also to ensure that the industry has a chance to grow. Greenfields exploration is the lifeblood of the mining industry in terms of finding the next generation of mines to ensure we hold our premier position in the world's mining scene.

The majors in more recent times have been inclined to deal into projects held by juniors. When those projects progress beyond the greenfields stage to a point where they are ready for higher levels of expenditure, preferably drill ready, the majors can step up and drill these projects and apply to the projects a higher level of expenditure than the juniors have been able to.

Secondly, the expectation is that the junior exploration companies will be the early risk takers—that has been a new step forward for the industry in the last five years—and they will progress these greenfields projects to a stage where they are attractive joint venture opportunities for the majors. The majors are then prepared to offer quite generous terms for such service and to joint venture with the juniors and proceed down the track of exploring them further. Of course, in many cases they are happy for the juniors even to manage the projects because their exploration teams have been decimated in recent years and they do not have the manpower to undertake the work.

Juniors are more than able and willing to undertake the pathfinding role, but the question raised is: in the prevailing financial environment how can the junior companies continue to fund greenfields exploration at the current or, in the context of this inquiry, increased levels of exploration? The answer in my opinion is that it is extremely unlikely that the necessary continued funding will be forthcoming without the introduction of incentives for investors to more willingly provide equity funds for minerals exploration companies.

The modus operandi there is one of a synergy between the junior and the major, but we have to ensure that the junior end of the business has the funding to maintain this momentum. At the same time, as the previous speaker said, I think we really need to look at ways and means of ensuring that the majors are stimulated to undertake more greenfields exploration themselves here in Australia, as distinct from somewhere else in the world. That is the essence of my thesis. I am happy to answer questions.

**CHAIR**—Thank you for that. I did note the comparisons on page 5 of your submission. They are quite disturbing. Do you think the junior exploration companies in their exploration side, as opposed to the mining, should have to go through the native title loop to the extent they do? Should there be two different categories given that, of course, in the exploration side now there is little or no ground disturbance?

**Mr Yates**—This whole issue of low-impact exploration has been addressed by some states and it is still not satisfactory. Most greenfields exploration is of a low-impact nature and ground disturbance is not fundamentally great. Of course, we still have the importance of protecting Aboriginal heritage; that goes without saying at any stage of exploration. But certainly it is very important if we can reach an understanding that low-impact exploration can proceed without going through the tedious processes of negotiating long, drawn-out agreements, expensive agreements, and that agreements can perhaps be triggered at a certain stage in the exploration process. The whole process would then be far more fluid and we would see a lot more of this important lead-up work being undertaken without undue delay. It is important and I think the industry has been invoking the concept of low-impact exploration for quite a long time. It was incorporated in the original Queensland native title legislation which has now been overturned. There are elements of it in the New South Wales Mining Act.

**Dr WASHER**—The flow-through share scheme for smaller companies is a terrific idea if we can get it right. What do you imagine would be the increased tax deductions that would be needed for greenfields exploration for big companies to attract them to that?

**Mr Yates**—There has been debate about in the range 125 per cent to 150 per cent of expenditure. I think that would be a sufficient stimulus.

**Dr WASHER**—Much the same as our R&D research type money.

**Mr Yates**—Yes. Obviously, whatever is done for flow-through, as well as greenfields exploration for profitable companies, requires a clear definition of greenfields exploration. For flow-through I think we would have to ensure that the funds are spent here in Australia; that they are clearly spent on greenfields exploration and not on other activities. We would need to ensure that the change in tax legislation was in place for a long enough period for the lead times for discovery to take effect and for the effect of the overall changes to be measurable. Maybe five to seven years—in that range—would give the industry a chance to show that these changes were having the desired effect.

**Mr TOLLNER**—Or not.

**Dr WASHER**—Obviously there are some parallels in the world where there have been demonstrative benefits to the taxpayer for that level of investment in this type of project.

**Mr Yates**—Of course. It is one thing to say that we need to provide the tax deductions for investors, but the taxpayer has to clearly understand that there are benefits to come from increased exploration and, of course, hopefully, the resultant discoveries. All the benefits that we see, the economic benefits we can envisage from mining, it has to be clearly understood will flow from stimulating the exploration business. Thank you.

**CHAIR**—Thank you for your submission here today.

**Mr Yates**—Thank you very much.

**CHAIR**—Is it the wish of the committee that the submission by Adelaide Resources Ltd dated 9 May 2003 be accepted as evidence and authorised for publication as submission No. 114? There being no objection, it is so ordered.

**Proceedings suspended from 10.31 a.m. to 10.43 a.m.**

**SUMNER, The Hon. Christopher John, Deputy President, National Native Title Tribunal**

**CHAIR**—Welcome. I invite you to make a short opening statement before we proceed to questions.

**Mr Sumner**—I have some additional material that I would like to make available to the committee. One is a supplementary submission, given that our original submission was 26 July last year. The other material consists of extracts from the tribunal's supplementary submission to the PJC on native title. The reason for tendering that material is to draw to your attention some criticisms made by Indigenous interests about some aspects of the tribunal's administration of the right to negotiate and the expedited procedure—particularly in relation to the information that we have required native title parties to provide in making an objection to the expedited procedure and whether it is accepted—and, secondly, that we are not required under the Native Title Act to deal with objections to the expedited procedure in a timely manner or as expeditiously as possible in the circumstances. Our view has been that we do have a requirement to deal with objections as expeditiously as we can, but I draw this to your attention as an example of a criticism that we are not required to, realising of course that your committee is concerned about timeliness in relation to native title issues.

The National Native Title Tribunal is a national authority and has attempted to provide a national overview of relevant issues and statistics. We thank the committee for the opportunity to appear and are happy to respond to questions and provide information requested by the committee. The tribunal accepts that the recognition of native title has resulted in additional cost and time for proponents to secure the grant of exploration licences and other mining tenements. The tribunal is unable to say what the disincentive effect of these additional compliance costs is when compared to other factors which have been identified, such as declining commodity prices and the world economic environment.

The Native Title Act gives native title holders or claimants a right to negotiate about some potential developments on their land, including exploration and mining. You are aware of the details of that, and they are set out in our original submission. The Native Title Act—the NTA—establishes procedures whereby the tribunal can assist the parties to mediate agreements or undertake inquiries to decide whether an exploration or mining tenement can be granted. In the past, governments have not utilised the procedures in the Native Title Act to their fullest extent to process exploration and mining tenements. For instance, the Queensland and Northern Territory governments stopped using the procedures in December 1996 following the Wik decision, while they sought the introduction of alternative state provisions under the 1998 amendments to the Native Title Act.

In September 2000 the Northern Territory started to give section 29 notices under the Native Title Act and used the expedited procedure or fast-tracking for exploration licences. The exploration licence backlog has now been eliminated. The Queensland government has announced its intention to revert to the Native Title Act scheme and expects this move to clear the backlog. The Western Australian government has utilised the Native Title Act right to negotiate provision since 1995 and used the expedited procedure for prospecting and exploration

licences. A total of 65.4 per cent of these have been cleared for grant without attracting an objection.

When objections are lodged, most of them are resolved by agreement, resulting in withdrawal of the objection when the explorer agrees to carry out an Aboriginal heritage survey. By way of example, one of the most efficient initiatives to promote agreement has been through the Amalgamated Prospectors and Leaseholders Association—APLA—whose officer is Mr Bill O'Donnell in Western Australia. It receives Commonwealth funding to work with representative bodies to carry out heritage surveys.

The tribunal acknowledges that in some cases there have been considerable delays in finalising heritage agreements, but this delay has often occurred with the consent of the explorer or prospector. Very few expedited procedure objections proceed to inquiry and determination in Western Australia, and that will now be the case in the Northern Territory. The WA government is now attempting to develop Aboriginal heritage agreements applicable to each native title representative body region so as to reduce the number of objections made, and that is being done through the Heritage Protection Working Group.

One of the major problems in Western Australia in the compatibility between state mining legislation and the Native Title Act is the grant of mining leases which are intended to be used initially for further exploration and most of which are never used for productive mining. Most of the backlog of mining leases falls into this category. The tribunal pointed out this problem in 1996, and the Western Australian government is now attempting to deal with the issue. The tribunal considers that, if governments actively use the procedures set out in the Native Title Act, resolution of disputes can be achieved and the backlog of mining tenements can be reduced.

The tribunal is only a part of the native title system and only becomes involved when requested by the parties, either to mediate or conduct an inquiry about the expedited procedure or an arbitration inquiry about whether a mining tenement should be granted. Most of the backlog involves matters which are not yet before the tribunal. The tribunal attempts to deal with these requests in a timely manner, but how quickly they can be finalised partly depends on the attitude of the parties and resources available to them.

The tribunal accepts that, although the problem has lessened since the 1998 amendments, intra-Indigenous disputes are still a problem in future act matters. Some recent examples have been the Burrup arbitration in Western Australia, the Ballardong dispute in the south-west of Western Australia—a dispute within the claimant group—and a dispute within the Gunai/Kurnai claimant group in Victoria. One of the major problems is the lack of resources available to representative bodies; in particular, to process objections to the expedited procedure, reach Aboriginal heritage agreements and carry out heritage surveys.

Finally, I note the recommendations of the draft summary report of the mineral exploration agenda established by Ian Macfarlane, the Minister for Industry, Tourism and Resources, relating to native title in future acts. The report recommends the development of regional template agreements for heritage protection and the use of the expedited procedure for low-impact exploration tenements. The tribunal is actively participating, through the Heritage Protection Working Group in Western Australia—through its chair member, Bardy McFarlane—in the development of template agreements. It is a matter for state and territory governments whether



the expedited procedure is used, but there is now a considerable body of law and practice developed by the tribunal on how it is applied. The use of it in the Northern Territory resulted in the removal of the exploration backlog.

**CHAIR**—The High Court's Ward decision and the Federal Court's De Rose Hill decision have been handed down since your submission was lodged with this inquiry. Would you like to summarise the impact of those decisions on native title and past resource tenements?

**Mr Sumner**—The decisions in Ward, Yorta Yorta and Wilson v. Anderson have been summarised in the supplementary submission.

**CHAIR**—I noted that.

**Mr Sumner**—The impact on the right to negotiate is not likely to be very great if native title is still established in accordance with the Ward decision, leaving aside, of course, Yorta Yorta and Wilson v. Anderson, where no native title exists. I do not expect the Ward decision to have a great impact on the right to negotiate—that is, if native title is eventually determined. That issue is, of course, currently back with the state government and the parties to sort through to see what the precise terms of the determination might be.

If native title exists, the right to negotiate flows from it. While there may be some effect on the right to negotiate, in that if the native title that is established is quite limited—the rights that are established as incidences of native title are quite limited—the effect of a future act on native title will also be less than if it is full-blown native title, but the right to negotiate will still exist. There will still need to be processes of negotiation and ultimately arbitration if native title is determined to exist. I do not expect it to have a great deal of impact on the right to negotiate.

**Mr TOLLNER**—Mr Sumner, companies at previous inquiries here have suggested that the native title negotiation process can be very slow and also very costly to them. Do you believe this is an accurate representation of the situation?

**Mr Sumner**—Yes. I do not think there is any doubt that the native title system has increased the compliance costs for developers wanting to get mining tenements of various kinds granted. The process can be slow in the sense that it has slowed things up. One of the themes of my paper and the tribunal's position is that the system has not been used to the extent that it could have been by parties. We are suggesting that, where it has been used, the problems have not been completely eliminated, but grants have been able to proceed.

The Northern Territory is the most recent example of that. From 1996 to 2000, because I understand the Northern Territory government were looking to go down the alternative procedures route, grants were put on hold. They were put on hold in Queensland as well. Once the system was used, using the expedited procedure in the Northern Territory, within a couple of years the backlog was reduced. That is partly as a result of decisions of the tribunal about whether the expedited procedure was attracted and whether the grant could be fast-tracked. The figures are that in 76 determinations in the Northern Territory the exploration licence could be fast-tracked and three could not be.

As a result of the legislation in the Northern Territory and the practice that had developed up there, exploration tenements are now being granted without the delays that were occurring previously. The answer to your question is that there has been additional cost and that in some cases it has slowed down processes. But it does not matter what system you have; if you add another level of compliance based on people's rights to land then you are going to get additional costs and some delays.

What we have to try and do is minimise those costs and delays consistent with recognising and protecting native title. What we would argue—and I argue from my personal experience and I do not think there is any doubt about it—is that state and territory governments have not used the system to the extent to which they could.

**Mr TOLLNER**—I have spoken to a couple of individuals. I do not know whether you would call them junior explorers or just scratchers. They suggested that some of the processes—and not just native title, but Aboriginal land rights negotiations and that sort of stuff, the cost and the access problems and the problems of finding who the traditional owners are and all of that—have virtually put them out of business. Is this a sentiment that you have heard elsewhere? Or am I just hearing that from a couple of disillusioned people who think it is all too hard?

**Mr Sumner**—I really could not comment on the extent to which the processes have put people out of business. I do not have any firm empirical evidence about that. Certainly from time to time, in matters that I have been presiding over, I hear the comment, 'I'm going to Tanzania or somewhere because these processes are too difficult.' Anecdotally I have heard that comment but I have no empirical or solid basis for indicating whether it is correct or not in fact.

**Mr TOLLNER**—Is it a logical sort of suggestion that there would be those very small explorers out there who just have no way, no resources, to deal with the process; that it has put an end to that, I suppose, freelance operator?

**Mr Sumner**—The process has added, as I said, compliance costs; there is no question about it. It would not surprise me if some small people have got out of prospecting and exploring because of it, but I do not have any firm statistical evidence on it.

**Mr TOLLNER**—Yes.

**Mr Sumner**—In Kalgoorlie, for instance, through the Amalgamated Prospectors and Leaseholders Association, Mr Bill O'Donnell's organisation, there has been an attempt to overcome the problem for small prospectors by them going to him and him negotiating with representative bodies, and in particular the Goldfields Land and Sea Council, to facilitate and make easier the grant of exploration licences. That body is funded by the Commonwealth Attorney-General's office. I think if you spoke to Mr Bill O'Donnell he would probably be quite positive about it. In other words, it has provided an avenue for small prospectors and the very juniors to go through the Native Title Act process. I could understand their frustrations. I have heard those frustrations expressed by individuals who have appeared before me.

The question is what processes and backup structures you can put in place, such as the APLA processes, to make life easier for those people. APLA is a successful example of where an organisation has been supported by the Commonwealth and has been able to work closely with

those small prospectors and lease-holders and resolve, in particular, the exploration issues through heritage agreements.

**Mr TOLLNER**—Conversely, I have heard from some traditional owners that the major land councils are not necessarily representative of their views. How far do you, as a tribunal, burrow down into these things to make sure that what land councils are telling you is emblematic of the views of the traditional owners?

**Mr Sumner**—If evidence is given, then, of course, the traditional owners themselves give that evidence—oral evidence. That is one way of ascertaining what their views are. It is, in fact, rare for oral evidence to be given. Most of these matters—and I am talking about the expedited procedure now—are dealt with on the papers. It is very difficult, of course, for a tribunal to delve behind the legal representatives, just as it is for any court or tribunal. If there are lawyers appearing for a party, that party is entitled to instruct lawyers, and the normal course would be that a tribunal or court would accept those lawyers in good standing as having the instructions of the people they are acting for.

If, for instance, they were not, there may well be ethical considerations for those lawyers, but unless there is something obvious that crops up to us, as a tribunal, which suggests the lawyers are not acting in accordance with their client's instructions, that is not something we can examine or go behind, just as we would not go behind it with respect to any other party that appeared before us, as to whether their lawyers were accurately carrying out their client's instructions.

**Mr TOLLNER**—Are you aware of any instances where resource companies may exploit native title determinations in any way? If you are, could you provide a couple of examples?

**Mr Sumner**—I am not sure. I would need a bit more of a lead on exactly what you are suggesting.

**Mr TOLLNER**—Where a determination is made in favour of a mining company, is that being used for purposes for which it may not have originally been granted?

**Mr Sumner**—I am not familiar with any of those examples. If you are talking about a determination—that is, a future act determination made by the tribunal—that a mining tenement can be granted and then industry or the person getting the tenement use it for some other purposes, or not comply with the conditions, I do not have any experience of that. But if there are conditions imposed on the grant of a tenement of that kind, then they are conditions that can be pursued in private litigation between a native title party and a resource company. Or, if they are conditions of the actual tenements themselves, in some states of course that could lead to forfeiture of the tenement. I am sorry, I cannot answer your question except in the generalities.

**Mr TOLLNER**—Yes, of course.

**CHAIR**—Just to pick up on a question that my colleague raised and an answer that you gave in regard to some of the very small juniors and their complaining that it is really getting too hard, I think your response was that some of them may have said that they are going to go off to Tanzania.

**Mr Sumner**—I was just giving that as an example.

**CHAIR**—It is fortuitous that you did give that as an example because Tanzania in fact, in land access and land claims, is far more beneficial than Australia. We rate very badly in those two categories. Tanzania rates better than we do. It would be nice if we could just get to their level in those two areas, then while we are world No. 1 we would scoop the pool. But thank you; I have heard what Mr Tollner was saying anecdotally and I do recall that was one example where someone said to me at a hearing, 'I'm going to Tanzania,' but I did not realise there was actually a good reason for it.

**Dr WASHER**—Mr Sumner, in the paper you quoted from there was a draft summary report of the mineral exploration agenda. In that there was a recommendation of the development of regional template agreements for heritage protection, particularly for low-impact exploration tenements. Can you expand on that and say what that really means?

**Mr Sumner**—What I think the exploration agenda is saying is that the parties, the states and territories should work on getting template heritage agreements or ILUAs in place so that there is an agreement more or less off the shelf that can be implemented without having to go through extensive negotiations in each case. That sort of work is being done around the country. You heard about it in South Australia from the previous witnesses. It is happening in Western Australia through a heritage protection working group that is being chaired by one of our members, Bardy McFarlane. He is working with each of the representative bodies in that state to try to get a template agreement. This will mean that, if the mining company signs up to that template agreement, the tenement will be issued without any objection. They would still have to go through the expedited procedure but the representative body would not object to the tenement being granted and it would go through just within the normal four-month notification period. That is what they are trying to do and Queensland have been doing something similar as well. I think what they are suggesting there is that more work should be done on it. It is already happening and I think they are just encouraging that to continue.

**Dr WASHER**—That sounds terrific. Basically then, if I can comprehend this, who funds this? The state governments are funding this now as individual states or is it state and Commonwealth funded to achieve this template?

**Mr Sumner**—The states are funding the process to a large extent to get to the template. The actual funding of getting a heritage survey done once the template is in place will, of course, be something that will be the subject of the agreement. Presumably this will be specified in the agreement and a heritage survey will need to be done. Generally in those agreements, at least the ones we have seen to date, that is an imposition on the explorer.

I should also say that a lot of the agreements I have seen at least are called deferred heritage agreements, so that where there is exploration which is non-ground-disturbing the representative bodies are not objecting to that. That proceeds without the need for a heritage survey. This is in some cases, not all.

**Dr WASHER**—Sure.

**Mr Sumner**—But once ground-disturbing activities are being proposed, then the heritage survey has to be done and the agreements then set out what the cost of that heritage survey will be; the cost for the attendance of traditional owners, anthropologists and whatever else it provides for. Those costs are still costs that will be borne principally by industry, not by state government, but the development of these templates is being managed by state government.

**Dr WASHER**—Basically, what we are trying to achieve is to get mining organisations or companies onto the ground in a low-impact way and to be able to explore before they have to go through the whole procedure of identifying heritage sites et cetera, as long as they are not creating too much damage.

**Mr Sumner**—You have to look at what each individual heritage agreement provides for. They do differ around the country but one that I have seen in Western Australia is as I have described. In deferred heritage, if there is no ground-disturbing activity, then the explorer can go on and do reconnaissance activities and this sort of thing. Once they wish to get involved in ground-disturbing activities, then the heritage provisions kick in.

We could provide some more details of that if you wished, or I am sure the representative bodies or the West Australian government could provide more details of it. If you would like me to, I can certainly go back and see what specifics they are able to tell you. These things are currently being negotiated, so to some extent they are not public. But I can tell you in broad terms that that is an agreement that in Western Australia has been used commonly.

**Dr WASHER**—But, as you perceive it, it is a leap forward for the companies to make progress in this area.

**Mr Sumner**—It should be, yes, if it works properly. If they can get the agreement and the mining industry accepts the agreement, what will happen is that notice will be given. There will be no objection to exploration licence by the representative body and the grant will then be made on the basis that the miner or the explorer has signed up to this template agreement.

**Dr WASHER**—How much of that already exists in South Australia, where you can get a title now that will allow you to go and do low-impact exploration? Perhaps that is a wrong statement. I do not know whether they can get a title to negotiate and then go and negotiate.

**Mr Sumner**—I do not think there is a great deal of difference between the system in South Australia and the system that operates in other states. In South Australia you get the grant upfront but it is subject to native title considerations. The other thing that happens in South Australia is that it is the proponent, the mining company, that has to activate all the processes, whereas if you are using the national scheme the state government pays the cost of notification. I understand the mining industry in South Australia is reasonably happy with the South Australian situation, and that is fine. Situations differ around the country but I do not think there is a dramatic difference between the two. Of course there could not be because the South Australian scheme had to be approved under the Native Title Act anyhow.

The other thing with the South Australian scheme is that, in order to find out just what is happening on the ground, you do not look at the actual grants; you look at the agreements that

are made subsequent to the grant that permits the miner or explorer to get on the ground and carry out the exploration or the mining. I have not seen any figures about that.

**CHAIR**—Could you give me an indication of the percentage of matters that would come before the tribunal that would be for mining as opposed to petroleum?

**Mr Sumner**—We would have to look at the statistics, but from my personal experience a great majority is for mining.

**CHAIR**—One would assume that.

**Mr Sumner**—The West Australian government uses the expedited procedure for mining exploration and the Northern Territory is also now using the expedited procedure. With respect to future act determinations—that is, the actual productive mining—there are fewer of those, but most of those would be for mining, although there have been a couple of petroleum matters I have dealt with. We could get the statistics for you if you would like them. From my experience, based on what I have heard, the great majority are mining tenements of various kinds.

**Mr TOLLNER**—I am interested in the way mining tenements sit on top of native title. In your experience, what other types of tenements can sit comfortably on native title? Is it limitless? I am aware that with the Adelaide-Darwin railway there were tenements negotiated to create that corridor. Was that an easy negotiation?

**Mr Sumner**—Those matters did not come to the tribunal at all for mediation or arbitration, so I am not familiar with the details of the Darwin-Adelaide rail line. The future acts can also include compulsory acquisition of native title rights and interests where the native title rights and interests are completely acquired, such as your freehold can be acquired for some purposes—roads and what have you—by government. Native title rights and interests can be compulsorily acquired as well. That is then total extinguishment; there is no native title left. That was the process up on the Burrup, which you may have heard of.

The most recent Burrup agreement was the same process as in Darwin on Wickham Point a few years ago, where native title rights and interests were compulsorily acquired. The tribunal had an involvement in that. That is the highest level of effect on native title extinguishment; you are taking people's rights and there is no native title. That process can, if it is not negotiated successfully, come to our tribunal and we can make determinations, as we have. Then you get various tenements below that. Obviously the grant of a mining tenement can be made over native title land and does not extinguish native title. Exploration likewise does not extinguish native title. I would need to know a bit more about the precise types of tenure you are talking about.

The Darwin-Adelaide rail link was negotiated as between the parties. I think section 29 notices were given under the Native Title Act for parts of it. The notice was given and then the parties were able to negotiate the agreement without any resort to us. That is fine if people can do that. It is a highly desirable situation.

**Mr TOLLNER**—I will leave it at that. I would love to talk to you at another stage.

**Mr Sumner**—Any time. I am quite happy to. If you want to give us a ring we can talk about it informally, for sure.

**Mr TOLLNER**—Certainly.

**CHAIR**—I thank you for your evidence here before the committee today. Is it the wish of the committee that the additional submission by the National Native Title Tribunal dated 12 May 2003 be accepted as evidence and authorised for publication as submission No. 115? There being no objection, it is so ordered. Is it the wish of the committee that the document entitled ‘Supplementary submission to the committee’ and presented by the National Native Title Tribunal be taken as evidence and included in the committee’s records as exhibit No. 47? There being no objection, it is so ordered.

[11.18 a.m.]

**WHITFORD, Dr David John, Manager, Research and Development, Commonwealth Scientific and Industrial Research Organisation Division of Petroleum Resources**

**GRIFFITHS, Dr Cedric Mills, Group Leader, Predictive Geoscience, Commonwealth Scientific and Industrial Research Organisation Division of Petroleum Resources**

**CHAIR**—I now welcome representatives from the CSIRO Division of Petroleum Resources. I invite you to make a short opening statement before we proceed to questions.

**Dr Whitford**—Firstly, we appreciate the opportunity of attending the hearing. We represent CSIRO's Division of Petroleum Resources and we approach this inquiry from an R&D perspective. Contrary to popular opinion, the petroleum industry is a technology intensive industry. In the past it has driven significant scientific advances and is a voracious consumer of new science and technology. We believe that the future success of the industry in Australia will be dependent, among other factors, on the maintenance of a technological edge relevant to the specific exploration and production problems encountered in Australia.

To put our work in context, CSIRO Petroleum is the largest Australian R&D provider to the petroleum industry. One of four research themes is directed at encouraging greater exploration activity and reducing exploration risk through the development of innovative exploration technologies. In this area we work with all sections of the industry operating in Australia, as well as other research providers such as Geoscience Australia. We are a partner in the Australian Petroleum Cooperative Research Centre and plan to be a partner in the Cooperative Research Centre for Greenhouse Gas Technologies that starts later this year.

Our submission has been prepared in light of Australia's well-known declining oil outlook. Although there are good reasons for concern and it is an issue of national importance, we are not yet convinced about some of the more pessimistic oil scenarios for Australia. We simply do not know, but we need to find out. Perceptions of limited prospectivity are a significant impediment to exploration in Australia and we believe there is scope to address this issue.

Secondly, we would welcome greater involvement of small companies in the business in Australia, reflecting CSIRO's specific commitment to small and medium sized enterprises. The final issue we would like to address is the public provision of geoscientific data. We fully support the current provisions for public access to raw exploration data and we would like to see them extended to maximise the benefits. That is all I have to say. I should point out that Dr Griffiths was primarily responsible for our submission and we will answer questions jointly.

**CHAIR**—If you cannot handle it, you are going to flick it.

**Dr Whitford**—That's right!

**CHAIR**—Dr Griffiths, would you like to add a short opening statement?



**Dr Griffiths**—No.

**CHAIR**—Thank you for your submission. I will not even mention that world risk analysis that was in your submission because I think I have done enough damage for now. On page 5 of your submission you talk about low-cost exploration and appraisal drilling. I note in your comments that you do not necessarily agree with the pessimistic view of the prospectivity for oil, particularly in Australia. Firstly, we are recognised as having gas potential but almost zero oil potential. Secondly, where you mention what the Norwegians have done, their equipment and their information and of course their prospectivity have catapulted them to a position to be admired. Do you think we have the opportunity to do just that, bearing in mind that the technology in regard to the drilling and where the processing links will be are no longer conventionally seen to be flooding platforms or the like?

**Dr Whitford**—I believe the opportunity does exist for us. I will turn it over to Cedric for a detailed response because of his particular knowledge of the Norwegian situation.

**Dr Griffiths**—I used to work in Norway. I spent 12 years working in the Norwegian Centre in research. Some of the developments that I mentioned here, associated with BP's low-cost drilling which they apply in western Africa, may be of interest to the Australian environment in trying to high-growth some of the onshore prospects in particular. I mentioned the land seismic, and I know that Schlumberger have experimented in the Middle East with some modifications to marine systems which are applicable to sandy deserts. Although the initial trials were not successful, I think that is an area where we could usefully use some research money in Australia.

**CHAIR**—I note that the Norwegians go down the path of geological sequestration of CO<sub>2</sub> but they do it for tax reasons. Why do the Norwegians encourage the sequestration? Is it, in fact, as your submission started to point out, to get more oil out of the same aquifer?

**Dr Griffiths**—I do not know. I am not qualified to comment on it.

**Dr WASHER**—Dr Griffiths, when hypothetically we use CO<sub>2</sub> or whatever fluid is pumped back down a hole—I guess it varies a lot—but what sort of extra recovery would you get across a broad spectrum of different types of holes and structures?

**Dr Griffiths**—The experience is that it is very variable. It depends on the particular field. It depends on the type of heterogeneity in the oilfield. You would have to carry out research into specific Australian fields to understand the potential benefits. I do not think it is possible to apply a broad-brush answer to that.

**Dr WASHER**—You would say, though, in the fields we currently have—those in the Bass and North-West Shelf—that it would be well worth our while spending some effort, time and money to have a look at that.

**Dr Griffiths**—That would be my opinion.

**Dr WASHER**—The seismic work that has been done, you said, has been mainly on land and has not been all that wonderfully successful. Has it been done in water?

**Dr Griffiths**—Sorry, I do not understand.

**Dr WASHER**—Has it been done in the sea? Has seismic work been done over shallow ocean areas?

**Dr Griffiths**—Seismic is the routine preliminary work for all oil exploration, both on land and sea. The issue generally is that three-dimensional seismic, which is very high resolution—and we are talking about 10-metre spatial resolution—is very expensive to carry out on land at the moment. It is very easy to carry out at sea. Most of the 3-D seismic surveys which are run routinely in Australia are offshore. Onshore 3-D seismic is slowly catching up, but it is very expensive. The recent exploration success in the Otway Basin is a direct result of increased use of 3-D seismic, rather than the old 2-D seismic. We would expect a similar increase in exploration success on onshore basins if we could cut the cost of 3-D seismic to that of 2-D seismic. Seismic is the standard initial exploratory tool for petroleum.

**Dr WASHER**—Is there any current research being done in Australia by any companies on 3-D seismic?

**Dr Griffiths**—Not so much in new 3-D seismic acquisition technology. There is work being done on processing technology aimed at imaging the subsurface more effectively, but not in the acquisition. The cost of acquisition is moving a large number of geophones across the land surface at these 10-metre spacings. If you imagine 1,000 square kilometres at 10-metre spacings, that is a lot of interruption to land processes. Moving that equipment across shifting sand dunes and the environment in the Cooper Basin is expensive.

**CHAIR**—Was CSIRO involved in the GEODISC project?

**Dr Whitford**—Yes, we are. We are partners in that project. GEODISC is a program of the Australian Petroleum Cooperative Research Centre.

**CHAIR**—You tested some 300 basins and applied 47 or 50 as being suitable for geological sequestration of CO<sub>2</sub>.

**Dr Whitford**—Yes.

**CHAIR**—It is a shame that the rest of the world will not realise that we cannot get Kyoto credits for sequestering, which we would like to.

**Dr Whitford**—Yes.

**Mr TOLLNER**—That is a good point you made, Mr Chairman. At a meeting about two months ago of this committee we heard from Barry Jones, the Chairman of the Australian Petroleum Production and Exploration Association. He made the point that, in order to get optimal efficiency in petroleum exploration, development and production, governments should butt out and not intervene; all decisions should be left to the market. I would imagine that is not your view in regard to R&D, that you would like the government to have some involvement there. But I am wondering if you see any avenues for the market to involve itself more in the R&D side of things?

**Dr Whitford**—Yes.

**Mr TOLLNER**—And how.

**Dr Whitford**—We are always interested in greater involvement of the industry in R&D. The CSIRO Division of Petroleum Resources has consistently run with an external funding ratio between 40 to 50 per cent of our total revenue base. We are closely engaged with the industry. One of the issues we discussed in our submission is the fact that it is, in some senses, easier for us to engage with some of the larger players in the game and it is difficult for the smaller companies to work with us simply by virtue of the fact that they do not often have the resources to support ongoing CSIRO R&D.

We have made a number of suggestions there. Firstly, we believe that the small company sector is an important part of the petroleum industry. We have an important role to play there but I believe there is also an important role for government, to help support that industry.

**Dr Griffiths**—It is also a difference in time scales. Commercial companies, both multinationals and small enterprises, have a requirement for an immediate or almost immediate return on investment. The sorts of research projects they would ask us to carry out will always have a short-term delivery. We are talking about six months to nine months.

**CHAIR**—It is the nature of the world we live in today.

**Dr Griffiths**—That is not necessarily the case in, for example, the Commonwealth's interest in long-term liquid supplies, where we might be interested in preserving supply over a 25- to 50-year period.

**CHAIR**—But the market, banks and shareholders expect the return. I guess that is the reason it is happening.

**Dr Griffiths**—We can contrast, say, the Australian point of view with the Norwegian point of view in terms of government investment in research.

**CHAIR**—I was going to say that was government backed.

**Dr Griffiths**—It was government backed.

**CHAIR**—And I will comment on that in a moment.

**Dr Griffiths**—For example, the enhanced oil recovery program, which is known as SPOR in Norwegian, was a government funded initiative aimed at increasing the return, the recovery rate, from existing Norwegian fields. Substantial investment in university and research institutes and research efforts resulted in an increase in the percentage of recovery. I do not know the exact figures, but on the major Norwegian fields, Stadt and Gullfax, the payback to the country is significant. I think the estimate was that increasing the recovery by 10 per cent on Stadt field would be the equivalent of finding a new Brent. It also has an effect on revenue in that it is usually cheaper to get more out of an existing field than to find a new one. The two are not necessarily in conflict—the return on investment and a long-term view on investing in the future.

**Mr TOLLNER**—I should have pulled out all the information I had on the Norwegian experience, but on that basis could Geoscience Australia, with CSIRO or whoever, achieve the same results or hope to achieve the same results for petroleum exploration that we have certainly achieved for mining? I would say that in every hearing we have had, those appearing before the committee have heaped praise on the data of Geoscience Australia and the complementary geoscience data that the states hold, yet we do not seem to be anywhere near that in regard to the petroleum area. Is it feasible for the Australian government to do basically what the Norwegian government did in some of those areas, in the petroleum area?

**Dr Griffiths**—I think so. It is very possible, yes. We would repeat the previous statements on the effectiveness of Geoscience Australia in providing precompetitive data to the industry. The petroleum industry uses that data regularly, especially seismic data and swell data. It is very important and will continue to be important. But we are talking about another level of involvement in terms of enhanced delivery cover.

**CHAIR**—I realise that. That is where I am taking you, sir. This is an opportunity not for a free kick but for CSIRO to promote one of their policies and they seem to be reluctant to do it!

**Dr Griffiths**—I would see that there is enormous potential for government investment in specifically targeted areas. An example might be the Cornea field. The Cornea P50 estimate was about 600 million barrels of oil. The P10 was about 2½ billion barrels of oil in the Cornea structure. Simply because Shell decided not to develop that field does not mean to say that oil disappeared. The oil is still there. It is going to be difficult to get out, but it is a phenomenal resource. Research work to develop the technologies, to develop these very heterogeneous, very difficult, oilfields would pay dividends. It is probably not something that a small to medium company, or certainly none of the multinationals, would look at, as Shell proved. It is too long term; it is going to have too slow a payback period to invest in the research.

**Mr TOLLNER**—Whilst our chairman may not want to mention it again, I would like to bring up your world investment risk survey.

**CHAIR**—I don't mind it being mentioned!

**Mr TOLLNER**—As it says, land claims, land access and green tape rank amongst the world's worst. Can you comment on the observation that these criteria, generally speaking, have a very high-risk global ranking, and how was the information arrived at in the first place?

**Dr Whitford**—I assume you are referring here to the table at the back of the CSIRO submission?

**Mr TOLLNER**—That is right.

**CHAIR**—They did not do it. They just included it.

**Mr TOLLNER**—I am sorry, yes.

**Dr Whitford**—I think that applies just to the minerals side of the submission rather than the petroleum submission.

**CHAIR**—It does. That is right.

**Dr Whitford**—There are a lot of issues that are relevant to the petroleum industry there, but this was prepared within the context of minerals.

**Mr TOLLNER**—How does it stack up as far as petroleum and gas production in those areas is concerned? Is it similar?

**Dr Whitford**—The environmental issue is of major importance to the industry in Australia and they take it seriously, and we are, in response to that, conducting research related to various environmental issues. For example, we have done work on clean drilling fluids, water based drilling fluids, rather than using hydrocarbon based drilling fluids. Our work with respect to carbon dioxide sequestration is in that broader environmental area. It is an issue that is important for the industry and it is important for us. It is an issue of concern not only in Australia; it is an issue of global concern, and I think the environmental standards in Australia generally keep pace with international environmental standards.

**Mr TOLLNER**—In this context we have been looking at it as a negative but, as Dr Gould mentioned earlier on—I do not know if you were here; he was the original speaker—it is a balancing act. You have to have regard to the environment, you have to have regard to traditional owners and those sorts of things. I am curious as to your opinion on that, particularly with the way the investment industry seems to be going these days with ethical investors; people having a higher regard—they are not in it just for an economic return; they want to make sure that things are looking safe. It seems that companies that comply with those sorts of measures tend to get a bigger piece of the investment pie. Do you see that that will change in the future, that our stringent protection of the environment and the way that we look after our traditional owners et cetera is a positive as opposed to a negative, or can be seen as a positive?

**Dr Griffiths**—I would say that it is absolutely positive, yes. From talking to industry in general, the feeling is not that these measures are in place which is important; it is the ease with which you can come to an agreement under those measures. I think BP, for example, would call itself an environmentally friendly multinational company and that it honours all the national agreements where it comes across them, but within their total global portfolio, as the previous speaker said, there are compliance costs and those compliance costs are taken into consideration, and the economic risk. While they would pride themselves on being environmentally conscious, honouring all legal and social environmental agreements, nevertheless all these things have a cost. I do not think anyone can say that it is unreasonable to honour native title issues or to honour a social compact within a country; it is just, ‘What is the cost of doing that?’

**CHAIR**—In your submission you indicate that Australian companies are relatively risk averse. You talk about an injection of new blood into small companies. Isn't it in the nature of companies and boards now to be moderately conservative? Can you expand on a point that you made in regard to that. If companies go and pull up a permit in the Gulf of Mexico, there is a fair chance that they will find something, whereas we do not necessarily have a reasonably good track record in Australia. Can you expand on the point that you made in your paper.

**Dr Griffiths**—I think the issue is connected to business in multinationals. The large multinationals have a global portfolio and they are looking at maximising their return on

investment and the speed with which that can be returned. The Gulf of Mexico offers the best opportunity at the moment, globally, closely followed by probably West Africa, but that is only concerning the very largest companies. The field size that you need to find in the Gulf of Mexico to make a return on investment is around, say, 250 million barrels minimum as soon as you get below about 500 metres water depth. You can make a profit out of much smaller fields onshore, and the Cooper Basin is looking as though it could well be profitable for liquids exploration for small companies. Companies like Stuart have proven that you can be successful, you can make money, out of small fields which have been overlooked by Santos within the Cooper Basin. There will always be these new small-play opportunities for small players. The domination of the Australian market by large multinationals will hinder that psychological perspective, so that if we get away from thinking in terms of what the multinationals need then it is possible to stimulate exploration profitably in the Australian onshore context.

**CHAIR**—In the western part of the continent we have not been lucky enough to have any significant finds and what we have had has not been heavy crude. It could be argued that that leads to the attitude of risk aversion, would you think?

**Dr Griffiths**—I think so, but the risk assessment, the undiscovered resource assessment, traditionally uses a creaming curve, which looks at the reduction in field size that is found over the years and continues that trend. What it does not do is take into consideration new plays, new concepts, and the Australian basins are relatively immature in exploration terms—there are very few drill holes compared to, say, the United States. We would consider them to be relatively young. Even the Gippsland Basin is still a relatively unexplored area in world terms. We need new concepts, new play concepts, new geological concepts. Somebody once said that oil is not found by drilling, it is found in the minds of men, and the perceived exploration potential in an area has enormous influence on that. People are literally flocking to the Gulf of Mexico. It is a herd instinct. It has been proven to be economic at the moment, but if we find a new play, for example, in the Great Australian Bight, if this new Woodside well comes in, that will change the perception, the psychology, of exploration in southern Australia.

**CHAIR**—There is a reasonably good reason why they are flocking to the Gulf of Mexico, whereas, of course, in Australia there is conversely a reasonably good reason why they are not flocking here, because we have not come up with the goods, as I say, just yet.

**Dr Griffiths**—Yes.

**Dr Whitford**—There are eight wells, or something like that, across the whole size of the bight. That must represent enormous potential for Australia, and, as I said in the beginning, we really do not know and we will not know until there is a lot more work and drilling and that sort of stuff.

**Dr Griffiths**—For example, in Brazil, Petrobras drilled 200 wells in the Santos Basin before they found Roncador oilfield. We are really underexplored compared to many of the other areas of the world, so there is no reason to be pessimistic.

**CHAIR**—This committee is very optimistic, but we have to try and get everyone up to the wire. I want to thank you for your submissions here today.

[11.48 a.m.]

**ESHUYS, Mr Eduard (Private capacity)**

**CHAIR**—Welcome. I invite you to make a short opening statement before we proceed to questions.

**Mr Eshuys**—The issue of impediments to the raising of capital for exploration in Australia has been occupying a number of people for some time. The fundamentals for Australia are that it has been well demonstrated by many that Australia is highly prospective. It is also clear now that Australia has enormous databases that have been collected, particularly over the last 35 years, by exploration activities by research organisations and, in the course of that, it has built up a very large pool of talented explorers and research scientists.

There is, in my view, a fallacy in the proposal that flow-through shares will lift the level of exploration activity in Australia. Exploration success is not necessarily a function of the level of expenditure. It has been demonstrated—not only in Australia but in other places in the world—that exploration success often comes as a result of necessity or as a result of very smart science or intellectual activity. I am not sure that providing larger sums of money to explorers will change the situation. It may, in fact, exacerbate the situation which occurs today.

I am sure you have heard from a number of parties that exploration expenditure has dropped dramatically since 1996. In my view, that has largely been caused by a fall in commodity prices and also a lack of exploration success by those very high levels of expenditure that occurred prior to that time. Exploration success prior to 1996 in Australia, of course, is a function of all the exploration and research work that commenced in the late sixties and early seventies. There have been two generations of exploration in Australia to date. One started in the 1850s, and saw the discovery of outcropping deposits in Kalgoorlie, Broken Hill et cetera, and the second generation started in the mid-sixties, when science started to be applied to exploration activity.

Perhaps I can illustrate by a very simple story. When modern day exploration started in Western Australia in the mid-1960s, geologists had to rely on the pastoralists to identify those green rocks which were likely to have nickel associated with them. Today, of course, there are geological maps of intense detail, geophysical information and other data that have built up. We are now in a very different position some 35 years later, where there is a vast amount of data and a very large pool of talented people. Access to the land can be achieved if the parties are willing, but Australia does not have the capital to develop its prospectivity.

I have proposed in my submission that the government encourage exploration in Australia so that it can be the No. 1 exploration country in the world, largely because it has the prospectivity to do so and it can be of benefit to the community as a whole. I propose that that be achieved by the government setting up a panel of experts to review propositions for funding, not necessarily on a large scale—on a modest scale—similar to the way the government allocates taxpayers' funds to universities. The process that the universities go through is quite interesting, particularly the science departments. The process that they go through to obtain their funding for three- to five-year periods is very elaborate and very disciplined, but the result of it has been that there are

three universities in Australia which are particularly good at earth sciences, and they clearly have been identified by taxpayer funded panels reviewing them as being the places where money should continue to be put.

There is a basis for having this sort of review process. The benefit of doing so is that that would then provide third party endorsement to individuals—or ideas being generated by individuals—and would then allow them, with that third party endorsement, to raise the risk capital from the normal capital markets or venture capital markets. That does not mean, of course, that existing ways of raising capital cannot continue. The two can run in tandem. I am suggesting that the government be involved in encouraging and initiating exploration to take advantage of the prospectivity, the data and the people that we have built up so that Australia is at the forefront as a mineral exporter and producer for the benefit of the community as a whole.

I heard this morning that there is discussion about whether there should be tax incentives—not only for the small companies but also for large companies—and that we should encourage those large global companies to explore in Australia. That may be so, but there is the issue that they have other agendas that can be quite different to Australia as a community as a whole.

My final point is in relation to the concern about encouraging or initiating grassroots exploration. Grassroots exploration, as many people have said, is difficult to define, but one thing that is clear is that exploration does not necessarily have to be in greenfields. Many large deposits have already been found but not recognised. It is in relation to this issue of supporting some intellectual intensity relating to deposits that have already been found—that are presently small, but which could be world class—that it is important not to separate, distinguish or leave out those possibilities because they happen to relate to a small mine or a small deposit or prospectors are already present in those locations.

Greenfields or grassroots exploration is important. However, the focus of any future government assistance should not necessarily just relate to that, but also to sound geological scientific ideas which aim to expand and enhance those deposits or those prospects that we already know about, because there are many cases around the world where giant deposits have resulted from the application of new geological ideas or new technology, allowing the exploration business to make a major discovery. Thank you.

**CHAIR**—Thank you. I note in your submission that some past exploration has been inefficient. Is this at a minor level or is it a larger problem? If so, how can we fix that?

**Mr Eshuys**—It is at a large scale.

**CHAIR**—And inefficient in what way?

**Mr Eshuys**—It is inefficient in the sense that not all entities take advantage and integrate the data that already exists. I heard earlier today that state governments and Geoscience Australia have been applauded for their management of the vast exploration and research data that has been generated. That is true but not all companies make full use of that data. Any flow-through or any tax incentive for exploration has to be mindful of the fact that not all explorers are going to be effective about the way they explore. There is lots of evidence in mineral exploration



history where it is in fact the sixth or seventh company that has explored a particular piece of land that is ultimately successful.

That tells you a number of things. First, it tells you that for six or seven times they have been doing exactly the same thing and came up with the same result. Second, it may be that during that process sufficient knowledge was built up to be successful. I studied a case, particularly in Queensland, where there were seven companies who had explored this particular block of land. It included both major and small companies over a 25-year period. They all came up with the same result because they all did the same thing. It is actually not that surprising. This concept of tax incentives does not take into account the rigour, the discipline, the intellectual capacity of the team or the people that are delivering or that need to deliver on the success.

**Dr WASHER**—Thank you, Mr Eshuys. I am fascinated to hear, and I tend to agree with, what you are advocating. In summary, if we have a dollar of the taxpayers' money and want to put it somewhere worth while, it should be in providing a setting for high-quality geoscientific research. We should attract talented researchers and use organisations that currently exist, like CSIRO, universities, state government and Geoscience Australia, compared with tax incentives like flow-through shares and tax deductions for greenfield exploration by larger companies. Can you expand on that a little? I must admit that what you have said is very valid. It is just a gut feeling that if we do pump money into these other things we will not get the results we anticipate. I am sort of agreeing but taking it a little bit further.

**Mr Eshuys**—Let us focus on making discoveries that have an impact either on a company or on Australia. The last major discovery in Australia is Olympic Dam. It is the only large mineral deposit in Australia that occurs undercover. At the same time, we know from the work the CSIRO and others have done that 70 per cent of the rocks that are prospective for large deposits are under cover. That means that on that basis there is enormous prospectivity. We have over the last 35 years developed techniques which allow companies and organisations to look through that cover. We also have had, during that time, enormous developments as a result of research in the understanding of how these very large deposits form.

The consequence of that is that it is clear now that these giant deposits occur in very special places for very special reasons. It needs a very disciplined approach to have scientific teams—and they can come from different aspects or different directions—focusing on where those special places are and why they are in those reasons. We have the scientists and we have the knowledge. There has been enormous research into how, for example, Olympic Dam formed. Scientists can use that model and apply that elsewhere. It is also possible now, because of the vast databases, to see why it is where it is. You have to try to replicate that.

The thing that concerns me about the flow-through share or any tax incentive is that there is a general concept that the more money you spend on exploration, the greater the success. But that does not take into account what I said before: these giant deposits occur in very special places for very special reasons, so they require a very determined, very scientific, very disciplined approach. It does not necessarily have to do with a lot of money. Once you have found them, the actual drilling out and knowing how much there is costs a lot of money. But, once a discovery is made, it is far easier to raise risk capital.

I am suggesting that if there is going to be any support by the government, it is in that very first step to provide the incentives and provide the encouragement for scientists—whether they are research scientists or exploration geologists—and support them in getting to that point where they have identified those special giant deposits. They might not always be giant—they may be major or they may be large or they may be smaller. You do not know that at that initial stage.

**Dr WASHER**—And to do that currently you would feel that we should use the facilities you have mentioned? Obviously, you would advocate CSIRO, universities and state government geoscience, but they would be the facilities you would fund to achieve this goal?

**Mr Eshuys**—No, I would not. I would use experienced explorers and/or researchers outside of those organisations who have set themselves up specifically to go exploring. It is quite a different concept to be exploring rather than researching. You would obviously use research but you would not use the University of Tasmania to explore for copper zinc deposits, even though they have been researching it for the last 20 years. There is a different mentality involved and required to make that step.

**Dr WASHER**—But you are advocating these companies, even though they may be private, would be contracted by the government and paid for and funded by the government to keep information for the purpose of the public?

**Mr Eshuys**—Correct.

**Mr TOLLNER**—You have mentioned the next generation of professional high-quality geoscience and engineers et cetera. Do you have a view on the adequacy of our current tertiary education system to turn these types of people out?

**Mr Eshuys**—I do. I think the tertiary education system in Australia is adequate to provide the quality of scientists required. But those universities are having difficulty attracting students to do the studies. That is because of the downturn that exists in the industry.

It starts unravelling, if you let it. What changes all of that, of course, is if there is a new discovery or if commodity prices go up. Australia has no control over commodity prices, but it can influence and assist with new discoveries, which in itself will then act as a catalyst. The answer to your question is, yes, they are adequate. The way it is evolving—where there are probably, in the end, going to be three earth science universities—is good, because these universities will become elite places, having the best teachers, the best facilities and, hopefully, will attract the best students.

**Mr TOLLNER**—Going on to a different subject, how do you rate the acceptance by remote Aboriginal communities that resource explorers are good corporate citizens, and how do you maintain that acceptance or improve it? Is it the responsibility of governments, companies or the communities themselves?

**Mr Eshuys**—That is a very interesting question, and I have had some experience in that area. I will illustrate my first point with a little anecdote. We were dealing with a local community, the elders of which made the point to us as a company—and to the mining industry as a whole—‘You blokes have all these fancy techniques to work out where to go, so why do you keep

bothering us? Why don't you work out where you want to be and, when you've worked that out, come and see us?' I think that is a very insightful observation, because in reality that is what it is about today.

Local communities, from my experience, are not against explorers. I have sat with elders under a tree and they have said, 'Look, our main concern is jobs for our young men.' There is, from what I see, a desire by local Aboriginal communities to have involvement and for exploration to be conducted on their land. Yes, they have their requirements, whereby you have to do the heritage surveys. There is no give on those, and there does not need to be. I have not known an Aboriginal community to hold up exploration.

**Mr TOLLNER**—I have not known an Aboriginal community that does not want some sort of development around them somewhere, to provide—exactly like you say—development and jobs for the young people. However, in reality it does not appear as simple as that. It seems that there are problems with access and the like. I would like you to expand on some of your experiences in that regard and whether you have had problems in the past. I think at times there have been some unreal expectations on both sides of the fence, but my understanding is that exploration itself does not necessarily bring with it lots of jobs. You seem to have had some success here.

**Mr Eshuys**—There can be many reasons why exploration or development is held up. Native title negotiations really are just part of that. I have had experience where other issues, which you would think would normally be much easier to deal with, were much more difficult than any native title negotiations. In many cases, the native title negotiations were settled well before a number of the other issues, whether they were environmental or commercial.

You used the phrase earlier today, which I picked up on 'the willingness of parties to negotiate'. This issue of difficulty of land access in Australia is, in part, a function of the fact that many exploration companies do not have the funds to explore anyway. To put it bluntly, it then becomes a holding situation until circumstances improve, and native title legislation or difficulty in getting native title agreement becomes a crutch by which they hang onto this land until a future date. In many cases, it is an unwillingness to proceed with native title negotiations which inhibits land access, because it is not really a priority at that particular point in time.

**Mr TOLLNER**—Should there be time frames put on exploration? We talked about time frames for the negotiation process. Should the same also apply to those explorers to say, 'Once you have this approved, you will get in there and explore'?

**Mr Eshuys**—Absolutely. Whether you are in the right place or not, you can certainly make a determination within a three-year time frame. That is the general rule anyway. With most exploration licences, you have to look at the land-holdings after a three-year period.

**CHAIR**—Is there much warehousing going on?

**Mr Eshuys**—I think there is a considerable amount of warehousing going on, but it is under the umbrella of the Native Title Act.

**CHAIR**—You and your teams are credited with a large number of gold discoveries in Western Australia during the eighties and nineties. Is there anything that you have learnt from those days

that could be used today, and how was your philosophy then any different from what many companies are putting to us now?

**Mr Eshuys**—Exploration success is a function of knowledge. Occasionally, it is a function of luck, like winning a football match. The company I was involved with was a great supporter of the research by the CSIRO and the universities. I guess it was the application of the research—not only by the CSIRO but the universities pulling together all the data that was available prior to making any exploration decisions—which had to be part of the reason for success, rather than an opportunistic approach to exploration whereby there was an old prospect: ‘Let’s go and drill it to see if it can be any bigger than it is.’ There has to be an element, in my view, of pulling all the data together prior to exploring.

The ability to do that today, 10 years hence or 15 years hence, is much greater, but the ability to raise the capital on that basis has not caught up. Today, junior companies raise capital on the basis that they have a little prospect, they are going to drill some holes and everyone hopes it will be a big bonanza. If you go through that process they may raise \$5 million but they will end up, after capital raising fees and compliance regulations and so on, with \$3½ million. They have to negotiate native title and that takes a bit of time and costs a little bit of money, but it is a small part of it. That \$3½ million goes nowhere really in an exploration sense. Within two years they are back to the market, raising more capital.

This is a very inefficient way to raise capital for exploration because only a small proportion of the capital raised is used effectively in exploration. We have to change that. In my view Australia, as a country, has to change that because in the end you have to be in the right place. There is not acceptance yet of the fact that exploration success can be a function of knowledge rather than a function of luck.

If we can create a situation where the government supported those parties, those people or those ideas which have peer group support by the universities or the CSIRO and allows those parties, those companies or those people to raise the capital with that endorsement, then you are going to start moving away from the attitude of, ‘Look, we’re just punting. The shares are 20c. We’ll punt \$10,000,’ and if they are lucky they will get something and if they do not, who cares? I think there is a basis now for getting away from that, because we do have the data, we do have the skills, to make big discoveries—but we will not do it the way we are doing it.

**CHAIR**—Yes, but in the early days in the mining sector, unfortunately, a fair degree of Australians who invest in a mining exploration that may well become a mine in production focus on the value of the share, not necessarily what the dividend eventually will be from that production.

**Mr Eshuys**—Sure.

**CHAIR**—How do you turn that around? It is the nature of the beast.

**Mr Eshuys**—Yes, but in reality the creation of wealth occurs in stages. There is enormous wealth created from the initial discovery to recognising that it is a deposit. The next step is when it gets put into production and dividends are paid. It is that first step that Australia needs to set itself up from the others. We need to, in fact, encourage that creation of wealth from a concept

through to a discovery. That is not necessarily a large amount of money. As I said earlier, it may require a lot of money to outline and determine the ultimate size of the discovery, but to get to that recognition that it is a discovery is not necessarily a lot of money, and that creates enormous wealth.

**Dr WASHER**—David Tollner was talking about the fact that, for Indigenous communities, the job opportunities do not seem to pan out to their expectations. Community expectations are important. Do you feel that the mining industry should make a greater positive effort to take Indigenous kids and give them opportunities in the trades et cetera relating to the mining industry?

**Mr Eshuys**—Yes, I think they do. Genuine efforts are being made, but it is quite difficult, not only for the mining companies but for the community as a whole. It is a community issue rather than a mining company issue. I have suggested that there can be incentives and/or bonuses for those companies who manage that process better than others. Ultimately, when you go to these local communities, you are distressed by what you see, but, at the same time, the elders, or the community leaders are very clear about what they aspire to for their young people. It is putting that aspiration and the ability together which is the difficulty. There is a basis for government providing some incentive or some bonus for those companies who tackle that with a bit more vigour and a bit more enthusiasm.

**CHAIR**—Thank you for your evidence today.

**Mr Eshuys**—Thank you very much.

**Proceedings suspended from 12.24 p.m. to 1.33 p.m.**

**WOODALL, Mr Roy, Director, Earthsearch Consulting Pty Ltd**

**CHAIR**—I welcome the representative of Earthsearch Consulting Pty Ltd and invite you to make a short opening statement.

**Mr Woodall**—Thank you. The most important thing for you to understand is that scientific mineral and petroleum exploration is absolutely no different in its concept and its need for financial support than any other form of R&D. Just as a pharmaceutical company has to run a highly expensive research program to continually replace products for the shelf, so a mining industry has to run a highly expensive, innovative, scientifically directed research program called exploration in order to replace the shelf life of the deposits which are being continually exhausted. That is the first thing to understand.

The second thing to understand is that the business is high risk. You are not going to attract adequate finance to any high-risk project unless the owners of those few successful inventions—and that is what a mineral exploration discovery is—are allowed to be highly rewarded. You have two problems: one is to attract people to make the initial investment, when they can invest in many other things which are low risk. Having done that, you will not have sustained investment in any venture unless the few people who do succeed are adequately rewarded.

I have referred you to, I think, a very highly regarded study of 32 years of mineral exploration. Perhaps I can leave this with you, Fred. That is the executive summary. In 32 years of mineral exploration in Australia, the conclusion of an economic analysis of those 32 years is that most people lose. If you want verification of what I said about it being high risk and the need for high rewards, you should refer to that document.

Another point is that it is one thing to make a discovery: you need to realise that very few discoveries really contribute significant profits to the companies that own them. Not only is it difficult to make a significant economic discovery, but perhaps only 10 per cent produce two-thirds of the profit. Let us suppose that the industry makes 170 discoveries over 32 years, as that document verifies. Most of the profit will go to the very few who found 10 or 15. The rest of them will barely get their money back. Of course, many people do not find anything and, therefore, lose their money.

It is critical to understand that, like any other form of research, you need persistence. You think you have a new drug. You try to develop it. You try to produce it. You fail. You find another one. You try to produce it. You test it. It fails. It is exactly the same in mineral exploration. You have an idea based on the best science. You do some drilling. You get encouragement. You do some more drilling and it fails. You go back to the data. You integrate what you have learned from the new data and you have another try. You look in a slightly different environment because you are now better informed.

This cycle of ideas, testing and returning to the drilling phase is repeated time and time again in any successful mineral exploration venture. Often it takes five, 10, and in the case of Olympic Dam—which you have probably heard lots about—30 years to find it; not five or six, but 30 years of increasingly understanding where copper might be found in this country, in a form

and in enough abundance such that it is a real national treasure and not just something which is going to be in production for five years.

You have to be able to raise money, you have to be prepared to reward those few who are successful, and the exploration has to be in the hands of people that can be persistent. If it is in the hands of junior companies, they have to be in an environment where they can continually top up their financial coffers or, if they are in big companies, then they must have a long-term vision. The Achilles heel of the industry at the moment is that the big companies, by and large, are risk averse and are not interested in long-term vision. Why? Because every quarter they are faced with a bunch of analysts, representing major institutional shareholders, who are more interested in quarterly returns than where they think the company might be five to 10 years down the track.

That is the industry as I see it. I know from personal experience that there is a whole basket of excellent prospects out there in the Australian environment desperate for drilling funds. That is a national tragedy. I have been in the business of mineral exploration for over 40 years. I know a good prospect when I see one, and I am seeing them, and nobody can find the money to even drill them. That is all I will say to introduce the subject, Geoff.

**CHAIR**—Thank you for that. You mention tax incentives as one sure way to capture community support for mineral exploration. What sorts of incentives did you have in mind that could induce the mums and dads to invest in mining exploration?

**Mr Woodall**—Because they are likely to lose their money, they ought to be given an immediate tax write-off.

**CHAIR**—Along the lines of the flow-through shares?

**Mr Woodall**—That is the closest anybody has ever got to a system which has been shown to be practical, creates incentive and is manageable.

**CHAIR**—I notice also in your submission you acknowledge that three of Australia's universities are turning out some of the world's best geoscientists. How should they, and how should we, give greater recognition to these people by the community? During our hearings in Brisbane, we had evidence that, because high schools are not bothering to teach earth science, a lot of the geologists that were coming through previously are now not doing so. What should we do to overcome that?

**Mr Woodall**—How do you encourage top-class science in our universities? That is the way I interpret your first question.

**CHAIR**—Basically, James Cook University said the problem is that they are now not getting the kids through from the high schools. The evidence, as I recall, was that it was not being taught in the high schools and, as a result, they are not seeing it as a sexy thing to do and are not entering that area.

**Mr Woodall**—The teaching of earth science at high schools is irrelevant. In high schools you have to teach the fundamentals of science—chemistry, physics, mathematics. Then you have to create an environment out there where people in universities, doing the hard sciences early on in

their university, see the job opportunities, see attractive salaries being offered. Then there will not be any problem attracting them to geology in second year and third year, and then geology at doctorate level. I think it is a furphy to be worried about teaching earth science at high school level. If you can do it, fine, but that is not going to determine what a smart first- or second-year university student is going to major in. He will look at the job market, and the rewards it offers.

You will get a few that are so in love with a particular science, they will do it for nothing, but that is not what we are talking about. We are talking about attracting a reasonable percentage of our really top scientists into the earth science discovery industry. They will only do that if they see that there are a lot of jobs and not a lot of geologists on the market without jobs, and fair salaries for them.

**Dr WASHER**—Mr Woodall, do you think that new aerial surveying techniques—geoscience type techniques—to look at the physics of the structure are going to reduce the fairly high risk of not discovering a find?

**Mr Woodall**—It helps. It does not reduce the risk. Instead of geological surveys presenting me with an aeromagnetic map of South Australia and saying, ‘Well, what do you think of it?’ when 90 per cent of it is all covered, if they came to me and said, ‘Here’s an aerial map of South Australia’—or the Stuart Shelf or some other mineral province—‘which has 47 magnetic anomalies. We have drilled a hole into those 47 and this is what the magnetic anomaly seems to be due to,’ I could go away and instead of trying to be smart with inadequate data I can say, ‘Well, my idea about finding this type of deposit is that I need a magnetic anomaly and I need these minerals showing with it,’ or this type of rock alteration or this type of host rock. Then I can make a decision that I am going to go for those six out of the 47 and then dramatically increase my chance of discovery.

But who is going to do the initial drilling? Do you want me to go out there and ask people to give me money just to drill 47 magnetic anomalies, just because they are magnetic anomalies, when the history of exploration on the Stuart Shelf is that there are hundreds of magnetic anomalies drilled and one Olympic Dam and one Prominent Hill, which no-one can make any money out of at the moment?

It would be the same with gravity anomalies. It is great that they do aerial surveys—they can be aerial and they can be on the ground—of mapping the gravity of the earth, and the gravity of South Australia or Western Australia. But you do not reduce my risk if all you produce for me is 127 gravity anomalies in Western Australia. They are all covered. How am I going to get someone to give me money to go and drill 127 blind gravity anomalies on the off-chance that one of them will be an ore body?

In the case of Olympic Dam we were smarter. We just did not drill every magnetic anomaly. We only drilled magnetic anomalies when there was a gravity anomaly coincident and we only drilled them when they had a certain structural signature. That increased our chances again. That is all to do with smart signs and smart integration. It would be a great help to all explorers if the surveys Geoscience Australia, the South Australian Geological Survey or West Australian Geological Survey were given some money so they could provide what we in science call ground truth. What is the magnetic anomaly due to? That would be a big help in reducing the risks, especially for the small explorers.



We used to do it in the early days when we were trying to find petroleum in this country. If you go back in history and look at what happened, if I did a seismic survey and found something that looked like a bump that might be an anticline, the first drill hole into that target was subsidised by the government. That is another way. If the surveys cannot be given money or do not have the money to provide ground truth, not just damn anomalies— anomalies with some character, which is what I am talking about— then make drilling subsidies available for people or companies that are prepared to go out there and provide that fundamental data. It is very high risk and you cannot expect people to do it. You would not invest in it.

But if you came to me with some magnetic anomalies, a survey or AGSO or a subsidised drilling program had put a drill hole into it and the alteration was the same as Olympic Dam and I could work out what the magnetics were due to— magnetic anomalies are not all the same; they are not all due to the same sort of mineral assemblages— I could make a judgment as a scientist as to whether this is a good project, a bad project or a medium project and reduce the risks to the people who are prepared to back me. You need more data. You do not need more aerial surveys. They are good, they should be continually upgraded, but we need ground truth to go with them. If the country is completely concealed, the ground truth has to come from drilling.

**Dr WASHER**—To follow that on, in Canada where flow-through shares have been so successful—or at least that is the country that has kept these and ironed them out—what do they actually do? Do they, as a government in Canada, take it beyond their aerial data?

**Mr Woodall**—No.

**Dr WASHER**—Still, basically that does not detract from the success for the investor of flow-through shares overall. It has been sustained now for some years.

**Mr Woodall**—Because it encouraged a lot of drilling. That is the key in concealed ground. Canada and Australia are mainly concealed. You have to encourage drilling or you have to be prepared as a government or governments—state and federal—to provide that early drilling money to provide ground truth. A key thing of any project you may be thinking about recommending is that there has to be a guaranteed high level of expenditure into drilling. Why? Because the country is all concealed and you cannot tell one good magnetic anomaly from another one unless you tell me what it is due to—or a gravity anomaly or any other sort of anomaly.

**Mr TOLLNER**—Mr Woodall, when you look at professional investors, it has been suggested that they look at risk versus potential returns. You are talking about reducing risk by having better ground truthing and that sort of stuff but at the end of the day the risks are always going to be there. A tax deduction or a subsidy is a bit of a sweetener to get involved in a particular investment but it does nothing at all to reduce risk or increase returns. I am just wondering why people in Canada would be investing in exploration if the risks are still the same.

**Mr Woodall**—They are betting they can make a world-class discovery.

**Mr TOLLNER**—But what I am saying is that the risk is not varying. They are still making that bet but the risk is the same, whether the government gives them a tax deduction or not.

**Mr Woodall**—No, there is a big difference between risking \$1 or only risking 50c if you got a tax deduction on the dollar.

**Mr TOLLNER**—Yes, all right.

**CHAIR**—Could the Canadians do it better?

**Mr Woodall**—Do what better?

**CHAIR**—They have applied a flow-through share arrangement to stimulate activity in the exploration sector. Could they do it better?

**Mr Woodall**—Are you speaking about the present flow-through share?

**CHAIR**—That is right.

**Mr Woodall**—I am not familiar with it, but they made a dreadful mistake the first time. The money had to be spent in a very short time and it was not sensibly spent. The money had to be spent in one year, so they went out and drilled holes. They had to because they had promised their investors that the money would be spent in one year. If you are thinking of anything like a flow-through share scheme, do not make it such that time constraints limit the professionalism of the exploration. If you have drilling money, you do not want to spend it all at once. You want to perhaps spend 10 per cent on the six anomalies which I have now selected because one of them may be better than all the others. I do not want to commit to spending on each of them just to spend the money. I want to spend 90 per cent of it on the best anomaly.

I have to do a little bit of drilling; I have to do a lot of thinking; I have to go back to the best four of the six and do a bit more drilling; I have to come back and think it through again and slowly spend the money. Otherwise I hope you do not have a flow-through share scheme, because a lot of money will be wasted.

**CHAIR**—The committee necessarily is not thinking of anything, but we have had a great body of evidence supporting a flow-through share arrangement, simply to bring about a greater level of investment in exploration. The point you made in regard to stage 1 of the Canadian experience has been shared with us by many people.

**Mr Woodall**—I just wanted you to hear what I think is the weakness of any flow-through share scheme should you be thinking about it.

**CHAIR**—Can I explore a little further your concept of extra drilling to shore up ground truth. If industry proposed that government should give a subsidy quote, I would think that a flow-through share would probably be better because it is in some way market driven, whereas a subsidy is not necessarily market driven and sends some very bad signals to other parts of industries, not just the industry. What is your view on that?

**Mr Woodall**—A subsidy is not my preference. I just wanted to mention it. The discovery of the petroleum and gas reserves in South Australia could have been delayed years and years if the early drilling had not been partly funded by the government. Rather than a subsidy, the surveys

ought to have drilling funds so that they can improve the data they are presenting to the potential investors, instead of just, 'Here's a magnetic map.' 'Thanks very much. All covered; I can't see a thing. I've got to find some drilling money to even start to sort the 10 per cent that might be worth while investigating. I've got a smart new geophysicist here. He can't tell me which are the best magnetic anomalies without some ground truth. What are the minerals down there? How deep are they? What's their concentration?'

The drill hole the survey could put down could tell him that it is mainly ilmenite down there; it is very sparsely disseminated but it is down at 500 metres, not 100 metres. It has certain types of cap rock over it or a gravity anomaly. Instead of just a gravity anomaly, the geophysicist is told that what is down at 150 metres, the rocks above are of a certain density; the rock that is causing your gravity anomaly has a certain density; it has a certain dimension. He can go away and tell me whether it is a sort of gravity anomaly that is likely to be associated with an ore body. But he is not a magician. He cannot tell me anything about the quality of magnetic or gravity anomalies without some ground truth.

**CHAIR**—I want to thank you for your evidence here today. We have found it interesting and informative, particularly some of your views in regard to getting that ground truth. You are the first one I can recall who has raised that point. It has been very helpful.

**Mr Woodall**—It is pretty hard to help you in 30 minutes.

**CHAIR**—Thank you very much for that. Is it the wish of the committee that the document entitled 'Executive Summary of Economics of Mineral Exploration in Australia' and presented by Earthsearch Consulting Pty Ltd be taken as evidence and included in the committee's records as exhibit No. 48? There being no objection, it is so ordered. I thank the witnesses who have appeared before the committee today.

Resolved:

That this committee authorises publication, including publication on the parliamentary database, of the proof transcript of the evidence given before it at public hearing this day.

**CHAIR**—I declare the public hearing closed.

**Committee adjourned at 2.00 p.m.**