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16 August 2001

The Secretary  
House of Representatives  
Standing Committee on Industry and Resources  
Parliament House  
Canberra ACT 2600

Dear Secretary,

**House of Representatives Inquiry into Resources**  
**Exploration Impediments**

I make this submission as an individual with over 40 years experience in the mineral exploration industry in Australia and overseas, mainly with a major mining company, prior to retirement in 2001.

With respect to the terms of reference of the inquiry this submission addresses, in part, dot point number two: "The structure of the industry and the role of small companies in resource exploration in Australia".

Australia's most prolific and productive era of modern mineral exploration by far was between about 1950 and 1975 when some 14 deposits each with an in-ground value of more than US\$1000 million (1992 dollars) were discovered. Mines from that era still produce a major part of our export income. Although easy access to land, the requirement to turn over land if unsuccessful, the climate of post WW2 optimism and the relative bureaucratic ease with which large developments could proceed were all major drivers of the process, there is a poorly recognised cultural aspect to success which is characteristic of the period and is largely absent today. I refer to hands-on leadership in the exploration industry and its beneficial effect in focussing, encouraging, mentoring and inspiring the professional ore finders on the ground.

By way of background, mineral exploration is a creative, intuitive activity based on a modicum of good science where most of the critical factors and information are unknown or concealed, sometimes even after a discovery has been serendipitously made. Successful explorationists are few and far between. They are mature experienced people, not young whiz kids. Most exploration geologists are lucky if they have been in any way involved in one discovery in their working lifetime. Exploration success comes infrequently.

In the western world between 1945 and 1992 there were only 75 discoveries each with an in-ground value of US\$1000 million or more, i.e., less than two major discoveries on average per year. Australia claimed 19 of these discoveries, or 25%, well above the world average, but 14 of them were made before 1975. The number of near-miss case histories is legion and success in some cases comes decades after initiation of the search and not necessarily by the instigating company. Intelligent persistence is thus at a premium. To encourage and support the people in the field who make the discoveries in this intellectually demanding environment they need constant hands-on leadership contact with the most experienced available senior explorationists, who must not be diverted by bureaucratic tasks.

In the 1960s even the largest companies had relatively small exploration teams and lean budgets. One very successful small exploration company worked with the concept that the ideal hunting group size (and exploration is a hunting activity) was no bigger than seven people. Experienced and wise explorationists, some of them directors or even CEOs of companies, kept close to the action, understood exactly what was going on and were ever ready to participate, advise, mentor and inspire younger explorationists. The result was a spate of exploration discoveries, as noted above, the like of which has not been seen again, notwithstanding more recent flurries of, especially, gold discoveries in the 1980s and 1990s.

Since the mid-1970s the position of exploration leadership has sadly deteriorated as presaged by a landmark 1976 paper by Dr. Leo J. Miller, himself one of the most gifted and successful explorationists of all time (see Economic Geology, vol 71, pp836-847). An increasing proportion of mining company directors and CEOs are lawyers, accountants, financiers and economists without an understanding of exploration practice. The few explorationists now in senior positions are usually remote from the action and not themselves necessarily the most successful at discovery. They tend to be exploration bureaucrats rather than creative explorationists. In recent years exploration companies in Australia have become much fewer and on average larger, thus further diminishing the chances of any direct hands-on influence from the top as used to be the case. The largest companies are increasingly directed from overseas headquarters – a further removal from the front line.

In the mid-1990s the large and medium sized companies made substantial staff reductions, largely the result of swollen budgets and lack of focus on ore finding in the 1980s. This put many exploration experts out of work; many found alternative employment in other industries and have been lost to the system; effectively there was an Australian technical 'brain drain' which tended to demoralise the survivors and had escaped general notice; an example of remoteness of management from the front line. Little wonder the discovery rate has declined.

The status quo in Australian exploration is unsatisfactory and will eventually have an impact on our export income. Exploration is at a low ebb, it has few local champions, it has not made a major greenfields discovery in years and it has a serious cultural dysfunction between the leadership and the troops.

If we accept as argued above that a culture of "small is beautiful" and close communication between and leadership of junior staff by seniors is one key to

exploration success then what can be done? We can not roll back the reality of globalisation and mining company mergers. They are driven by short term benefits such as economies of scale. Exploration by contrast is a long term exercise in which quality counts for more than quantity. Successful exploration teams are dedicated, consistent, persistent, flexible and innovative. The practice of hiring a few contractors as and when required, that is, on again off again, is a recipe for failure.

My conclusion is that the answer to this cultural impediment is to support the junior exploration companies, the groups employing five to ten explorationists, more often than not led by an explorationist with vision and experience, locally based and focussed, with close communication of ideas from top to bottom. By virtue of size they are the only hope of return to a culture of hands-on exploration leadership. One large mining group is already attempting just this through liaisons and joint venture agreements with several junior companies who are their de facto exploration department, but freed up from many bureaucratic constraints. This approach needs to be encouraged nationally. I have no ready prescription how this might be done but it seems that some combination of: improved access to speculative funding, eg, through “flow through” shares; minimisation of tax on those prepared to take the risk; minimisation of tax on profits from onselling discoveries; and reduction of bureaucratic requirements imposed by other types of impediment like native title would be moves in the right direction.

I trust this submission is helpful to the deliberations of the enquiry. Unless the position of mineral exploration is improved soon the nation will suffer the effects in five or ten or perhaps fifteen years time. This is indicative of the long time frames in exploration activity.

Yours sincerely,

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