



New Zealand Branch

Newsletter

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Report from the Chair – End of One Year – Start of Another *Dave Stewart*

Conference 2004

The Nelson conference held at the end of August was a great success. The Rutherford Hotel in Nelson was an ideal venue for the size of the conference, the number of attendees was very good for a NZ Branch conference, and the range of papers was varied, relevant and interesting, as were the speakers. The sponsors were generous, and the trade displays were well structured, informative and colourful. To complete a good conference the Branch managed to clear a healthy surplus, which was an outcome of the above factors.

The Branch committee are currently considering where to use these surplus funds, and it is likely that the money will be allocated for the following purposes:

- A new edition of Monograph 25 "Geology and Exploration of New Zealand Mineral Deposits", edited by Tony Christie and Bob Brathwaite.
- Digitise old NZ Branch conference proceedings. This will ensure a record is kept, as most are on hardcopy in diminishing numbers, and also allow easy reproduction when required.
- Support attendance of one and possibly two, representative from the NZ Branch to the New Leaders conference being held in Brisbane April 2005. If the committee decide on two representatives, we will be seeking applications from new professionals within the NZ Branch to attend.
- Transfer to the NZ Branch Education Endowment Trust fund. This fund is used to award scholarships for post-graduate projects related to the minerals industry. Four have been granted this year.
- Retain enough funds as we normally do to carry on with Branch activities and commitments.

To all those who attended the conference, thank you, and to our sponsors, thank you also. Next year's conference will be held in Auckland and we will be convening this with Crown Minerals. There will be more information on this conference later and a conference notice is attached.

Major Mining Projects

There have been a number of projects underway this year, mainly in gold and coal. The underground mining projects have been of particular interest. Going underground in the geological upheaval of New Zealand requires patience, understanding and perseverance. Unfortunately, all the 'easy-to-get bits' are gone, but we still have enormous mineral resources here and ventures underground can and will tap into high quality products.

OceanaGold have commenced the Fraser underground development in Central Otago, and have started refurbishment of the Prohibition Shaft at Waiuta near Reefton. The Globe Progress surface mine development (also near Reefton) is also well down the planning track. Newmont Waihi Gold has commenced their Favona Project, which will take over gold production from the soon to be depleted Martha openpit mine. Solid Energy NZ has all three of their underground coalmines in major development phases. Spring Creek has been operating a high pressure hydromonitor in an extraction section, Terrace mine is now ready to drive into the first extraction panel of the newly developed section 3 area, and East mine continues to drive headings to the north and develop and extract panels on the way.

All these projects have had their problems. All operations expected some problems but not all problems are predictable. Such is the nature of New Zealand geology and mining!

The Pike River coal development project is also progressing and NZOG, the major shareholder, is currently evaluating financing options. It is likely surface development will commence before mid 2005.

One thing these projects have in common (other than going underground) is where to get the employees to take the projects to completion. There is a shortage of just about everything in New Zealand with regard to mining experience and expertise. It proves a long held belief that the mining industry goes through cycles, and that training, promotion and development of people into the industry appears to be out of kilter with the demand part of the cycle. We have a shortage of skills across the board, and the nature of mining is such that employees are not normally available from the local WINZ office.

NZ Branch Committee

The NZ Branch committee elections were held at the AGM and the following are the people representing the NZ Branch for the coming year:

Chairman/Secretary – Dave Stewart

Treasurer – Bob Brathwaite

Committee and recently elected AusIMM Board member – Roger Gregg

Committee members - Vivienne Bull, Nicola Cummack, Tony Christie, Colin Douch, John St George, Graeme Fulton, Murray Stevens, Cam Wylie, Murry Cave

Local organisers – Peter Gunn (Christchurch), Richard Cotton (West Coast), Tony Christie (Wellington).

Newsletter – Murry Cave

Website – John St George

Students and New Professionals – Nicola Cummack

Geoff Boswell has recently resigned from the Branch committee and as Auckland local organiser because of work commitments overseas. The committee are appreciative of Geoff's work and input; particularly his quick response on current issues and his comments and opinions have always been very pertinent and helpful. Good luck in the new job Geoff!

This leaves us with a vacancy for the Auckland local organiser so if there are members who want to become involved and live in the Auckland/Waikato region, then we would love to hear from you.

Christmas and New Year

By the time this newsletter has been distributed Christmas will be just around the corner. The Branch committee and I wish you all a very Merry Christmas and a Happy and Prosperous New Year.

New Zealand Branch represented on the AusIMM Board *Roger Gregg*

Following the recent Board elections Roger Gregg from our Branch was elected to the Board. In many ways our Branch now has two representatives on the Board as John Dow, whilst being based in Adelaide is a New Zealander, identifying with both New Zealand and his role with Newmont in Adelaide.

Roger had the following comments to make concerning his election, while background notes, which will be included in The Bulletin, follow on.

"It is really great when the New Zealand Branch with all of its 150 or so members can have a member elected to the Board. I thank all of our Branch for their support, in particular that of our Chairman Dave Stewart and our previous Board member, Vivienne Bull. I also thank Ian Devereux of Rocklabs for his support. He has encouraged my Board membership, recognizing that it will make some demands on my/Rocklabs time. Of course New Zealand support alone would not have achieved this result, which is a reflection of the affection which the rest of the AusIMM holds towards New Zealand."

"I am proud and honoured to be elected to the AusIMM Board. While I live in and have been Branch Chairman of one of our smaller branches, New Zealand, I will work to advance our whole Institute, and the interests of all of its 7000 plus members.

While I believe in examining and advancing all aspects of our AusIMM activities, I have long had a particular interest in fostering Branch activity and our growth as individuals within the Institute. I will bring our successful experiences as a small Branch to the Board in helping to advance the AusIMM in general. However I do not have a monopoly on ideas and successful experiences. Fresh ideas on how we can best advance our AusIMM are most welcome. Please send them to rogheh@ihug.co.nz and I will present them.

My email address contains elements of my name and that of the lady in my life, my wife Helene. We have a mature family of two daughters, a son and a really cute grand daughter. I play a game similar to golf and have interests in wine, cricket, cars, rugby and swimming.

I am a geologist. After completing a double BSc in geology and chemistry and an MSc (Hons) in geology at the University of Canterbury I undertook post grad work at the University of Alberta before working in exploration geology in west and northwest Canada. I then moved to Melbourne, lecturing at RMIT.

On returning to a New Zealand base in 1969 I established the New Zealand operation of Layton and Associates before forming my own consulting companies, Roger Gregg and Associates and Earth Scientists Ltd. This led to work in the field and management of primarily mineral exploration and gold mining.

In the period 1981 to 1987 I worked with State Coal Mines, firstly defining the geology and its mining significance in the Huntly West underground coal mine and then as on-site manager of a multi-disciplinary team developing the Maramarua opencast mine.

Sigma Resources' formation saw me appointed as Production Manager of their alluvial gold mining operations. Following the take over of Sigma Resources by Delta Gold I returned to consulting before joining Crown Minerals in the Ministry of Economic Development in 1991. My brief

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was to develop and implement a communications strategy to promote investment in the Crown's mineral estate – both minerals and petroleum. In carrying out this work my roles as representing the government and the AusIMM often merged, for example in organising the jointly convened New Zealand Minerals and Mining Conferences. These conferences benefit the industry, government, the AusIMM, the Branch and individual AusIMM professionals. Our conferences, either as stand-alone Branch conferences or as broader New Zealand Minerals Conferences, are a real focus for our Branch activities, regularly attracting about 100 of our 150 members.

Following a reorganization of Crown Minerals last year I joined Rocklabs, advising laboratories and mining and exploration companies on sample preparation and the use of reference materials.

I'm looking forward to further discussions with my fellow Board members about rugby, fending off complaints about my New Zealand pronunciations and, seriously, of doing what I can to advance our AusIMM."

Regional Meetings

Wellington Section News *Tony Christie*

The section meets in the Staff Club at Victoria University of Wellington. On Wednesday 28 July, 2004, Bruce Utting gave a presentation entitled:

"Mongolia...Land of Opportunity!"

Bruce visited Mongolia on a joint World Vision/NZAid project to drill water bores in drought-affected areas in the Gobi Desert. Although not part of his brief, naturally he took an interest in the mineral potential of the country, which he judges to be huge. Since the discovery of Ivanhoe Mines' gigantic copper/gold porphyry (at least 14 million tonnes of copper and 25 million ounces of gold announced so far, with the deposit still open-ended) the world's mining companies are beating a path to the country's door. The following is extracted from Bruce's notes for his lecture.

Mongolia, - the legendary land of Ghengis Khan, is a land-locked, bowl-shaped nation with an average altitude of 1500 m, mountains in the NW rising to around 4000 m, and the Southern one-third covered by the Gobi Desert. Precipitation (mostly in the form of snow) in the Gobi is 100 – 200 mm/year and the climate is harsh with winter permafrost to 2 m, winter temperatures are often -25°C, and summer temperatures are up to 38°C. Sharing a 4673 km-long border with China on E, W, and S sides, and 3485 km border with Russia to the N, the country is six times the size of New Zealand or roughly one fifth the size of Australia yet has a population of only around 2.5 million people. About 1.5 million live in the capital Ulaan Bataar, - about half a million people of whom have arrived in the last two or three years from country areas.

Mongolian Geology is complex. During the Palaeozoic, Mongolia went through a phase of island-arc accretion and/Andean type subduction, with later basin and range style rifting and bimodal volcanism. By the Mesozoic, continental uplift was in progress with much terrigenous sedimentation into thrust-controlled foreland basins. By the end of the Cretaceous the climate was arid, much as it is now.

Mongolia is a mineral rich country with major potential for further large orebodies in addition to those discovered already. It is a large producer of fluorspar, and has hard rock and alluvial gold, silver, base-metals, tin, tungsten, rare earths, uranium, phosphorite, salt and potash deposits, together with large coal resources and good potential for oil and gas. Many of the existing Russian-managed mines fell into disrepair following the Russian pull out in 1990. Some have never been revived, possibly because they proved uneconomic when the captive Russian market disappeared, but others are going strong.

Following the re-establishment of democratic Government in the early 1990s, the country took steps to attract foreign capital, as well as tapping heavily into world Aid. A new Minerals Law and licensing regime was established in 1995, and has resulted in numerous foreign mining companies staking ground. This trend has received a huge boost with the discovery of the gigantic Turquoise Hill deposit by Ivanhoe Mines about 4 years ago.

Turquoise Hill (= Oyu Tolgoi) is essentially a gold-bearing porphyry copper deposit. It is located in an area known to have been worked for copper since the Bronze Age. A molybdenum anomaly was looked at by Mongolian and Russian geologists in the 1980s, but it was not until 1996 when Magma copper (later taken over by BHP/Billiton) undertook serious exploration. Several thousand metres of drilling was carried out, but in 2000 BHP pulled the plug, the area was offered out for farm-in and Ivanhoe signed up.

Ivanhoe (listed on Canadian and Australian exchanges) completed about 9000 m of RV drilling by 2001, aimed at testing the upper supergene-enriched chalcocite blanket found by BHP, followed by 3 DDH's which probed deeper. This work was very encouraging and drilling has escalated to this day with perhaps as many as 20 rigs drilling full time in the summer. A major success resulted from testing an IP high in the far North of the property, with the first hole interesting 638m of bornite/chalcocopyrite mineralisation, 220 m under younger sedimentary rocks. Most of the material delineated in this deposit ("Hugo Dummett") is over 200 m thick going around 3% copper, and a large underground development is planned.

The geology of the Turquoise Hill mine area consists of an early to mid Proterozoic typical calcalkaline Cu Au porphyry environment. Outcrop is very sparse with up to 40 m of red clay and Quaternary sands and gravels covering much of the area. Hardrock geology comprises dacite and basaltic flow units, sedimentary sequences, dacitic pyroclastic units, augite basaltic flows and breccias and andesitic volcanoclastic units.

Mineralisation is characterised by multiple copper gold porphyry centres with a high grade SW orebody, 250 m in diameter, extending vertically at

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least 800 m, with mineralisation extending out in the host basaltic volcanics, the whole riddled with milky mineralised quartz venation. Alteration is predominantly quartz sericite with lesser tourmaline and fluorite. In the high grade Hugo Dummett deposit (named after a company Vice President who was killed a year or two ago in a car crash...), mineralisation occurs mainly as bornite, chalcopyrite, and chalcocite, a large part of the deposit being hosted in an ash flow tuff.

The deposit is located about 12 hours hard drive (550 km) south from U.B., and 80 km North of the Chinese border, with the nearest railhead over 160 km away in China and 360 km N in Mongolia! Consequently there are major infrastructure, energy and water problems, all of which the company is confident of solving.

Following Bruce's presentation, a group went to the Rama Thai Restaurant on the corner of Tory and Vivian streets for an excellent meal, although some of the curries were hot! Terry Bates was visiting NZ and joined us to catch up with contemporaries from way back. Many stories from 1970s and 1980s exploration were recounted.

Christchurch section Pete Gunn

The Canterbury Branch held a student oriented meeting on 20th October that was well supported by students. A presentation by Liam Connor on the potential for reducing AMD from Stockton by encapsulation was well received. The paper showed that provided oxygen could be prevented from entering the reaction zone the products of AMD were reduced from the control situation. This also included using a potential AMD producing mudstone as the encapsulating medium.

It was hoped that potential employers would flock along to the meeting to meet students, but this was not the case. Still Joyce Seale's baking provided a welcome focus around which many good debates were held.

AusIMM monograph 25 Geology & exploration of NZ mineral deposits Tony Christie & Bob Brathwaite (ed.s)

AusIMM monograph 25 is the planned successor to monograph 13, Mineral Deposits of New Zealand (Kear volume 1989). The new monograph is on track with five of the 44 papers received one month before the submission deadline of 30 November 2004. The received papers have been distributed for peer review. A business plan has been developed which includes underwriting by the New Zealand Branch, corporate sponsorship and a contribution of desk-top publishing services by AusIMM Central Services in Melbourne. Printing will probably be done in Australia, coordinated by Central Services. Both hard copy and CD-ROM formats will be produced. Our aim is to launch the monograph at the 2005 New Zealand Minerals Conference in November 2005.

Student projects in the University of Auckland mineral deposit research group Jeff Mauk

Students in the University of Auckland mineral deposit research group are involved in a number of projects in New Zealand and overseas. This work is supported by the NZ Foundation for Research Science and Technology, Newmont Waihi Gold, Heritage Gold NZ, Meridian Gold, Ivanhoe Mines Ltd, Broken Hills Gold Company, the University of Auckland, and the New Zealand branch of the AusIMM.

Many of our projects focus on epithermal gold deposits of the Hauraki Goldfield. Devin Castendyk is completing his PhD thesis on the geochemistry of the future pit lake at Waihi, and has just published a manuscript that describes mineralogical variation within the open pit. Ian Warren is finishing his PhD on the genesis of Au-Ag epithermal veins at the El Penon deposit, in Chile. Nik Smith continues his work on the regional geophysics in part of the southern goldfield. He has just submitted a manuscript that refines the extent and boundaries of the Waihi Basin, based on its gravity signature. Nik is also advancing his magnetic work and relating geophysical data to regional structural trends. Matt Harris has begun an MSc project in the Karangahake-Rahu-Ascot area, where he is analysing geophysical signatures of alteration and mineralisation, and looking for major structures in the area. Alistair Stuart is working on a complementary MSc project in the same area, studying the geology, and hydrothermal alteration. Sandy Sen is well advanced in her MSc project which examines the alteration that is associated with porphyry Cu and skarn mineralisation at the Oblaga deposit in Inner Mongolia, China.

Three students who have just finished their BSc degrees are also involved in summer research projects at the University of Auckland. Luke Williams is working to identify and assess structural lineaments in the Coromandel Peninsula. James Mortimer is working at the Broken Hills deposit to identify the different generations of veins that occur in the deposit, which veins are mineralised, and the relations among the veins and the breccias. Kate Ward is preparing mineral separates to obtain precise radiometric ages for many deposits in the southern part of the goldfield, and also assisting many of the above students with their field work. For additional information on any of these projects, please contact Jeff Mauk at J.Mauk@auckland.ac.nz.

Education Endowment Trust awards John St George

EET awards have been made to the following four students this year.

Alistair Stuart, Auckland University, Geology and Geochemistry of the Karangahake epithermal gold and silver deposit, North island, NZ

Matthew Harris, Auckland University, Geophysical characteristics of epithermal deposits in the southern portion of the Waitekauri Corridor, Hauraki Goldfield, NZ.

Roelant Dewerse, Auckland University, Highwall stability assessment, Awaroa 4 Opencast Coal Mine, Rotowaro Coalfield.

Charles Rands, Otago University, Molybdenum bearing plutons of NW Nelson, geology, mineralisation, and tectonic setting.

Geological Map of New Zealand online

The Institute of Geological and Nuclear Sciences has made available a digital Geological Map of New Zealand on their website. The address is: <http://maps.gns.cri.nz/website/geoatlas>

The map is a limited update of the 1:1 million paper geological maps published in 1972. It is related to, but more detailed than, the 1:2 million poster published in August 2004. The Geological Map is accompanied by photographs and a summary geological text. There are links to the Active Faults Database and the QMAP programme progress page.

The Geological Map can be queried by clicking on the unit polygons. Two geological legends (Sedimentary/Volcanic and Basement) are also available.

Conference reports

SEG 2004 Conference, Predictive Mineral Discovery Under Cover *Tony Christie*

The Society of Economic Geologists 2004 conference was held at the University of Western Australia, Perth from 27 September to 1 October, with a theme of Predictive Mineral Discovery Under Cover. This was the first time that SEG has held its conference outside of USA. The conference also included a one-day session, the Eugene Stumpfl Memorial Symposium, sponsored by the Society for Geology Applied to Mineral Deposits (SGA), the group responsible for the journal *Mineralium Deposita*.

The conference was attended by about 740 delegates, of which 70% were from Australia, 13% from North America (with Canada and USA approximately equally represented), 9% from Europe, 5% from Africa and South America, and 3% from other localities including New Zealand. New Zealand delegates included Tony Christie (GNS), Donna Falconer (University of Otago), Roger Gregg (Rocklabs), Greg Partington (Kenex), Mark Simpson (University of Auckland), and Nick Whetter (Oceana Gold).

The technical programme consisted of oral presentations and posters. Extended abstracts are published both in hard copy and CD-ROM formats in: *Muhling, J.; Goldfarb, R.; Vielreicher, N.; Bierlein, F.; Stumpfl, E.; Groves, D.I.; Kenworthy, S. (eds) 2004: SEG 2004: Predictive Mineral Discovery Under Cover: Extended Abstracts. Centre for Global Metallogeny, The University of Western Australia, Publication No. 33. 470 p.*

A copy of this publication is lodged in the library at the Institute of Geological and Nuclear Sciences.

Tuesday, Wednesday and Thursday were a single stream of 36 invited papers, with 30 minute time slots. The conference organising committee, headed by David Groves (UWA), had invited specific paper topics to address the conference theme and these were grouped under five main subthemes: The Business of Exploration, Models of Exploration, Minerals Systems Footprints and Their Recognition Under Cover, and targeting. There was criticism from some delegates that the format of invited speakers and their reviews were not ground breaking stuff, although this was partly addressed by the SGA session on Friday. Nevertheless, there were many excellent presentations from world famous explorers and researchers including Ray Woodall (CSIRO), John Dow (Newmont), Dick Sillitoe, Neil Phillips (CSIRO), Rich Goldfarb (USGS), John Thompson (Tech Cominco), Charles Butt (CSIRO), Jay Hodgson (Barrick), Francois Robert (Barrick), Bruce Gemmell (U of Tasmania), Noel White, and Ross Large (U of Tasmania). Greg Partington was a coauthor of a presentation by Roger Mustard (James Cook U) on iron oxide gold deposits. I particularly appreciated presentations by Paul Agnew (Rio Tinto) on levelling and analysing vast publicly available geochemical data sets, and Tom Blenkinsop (James Cook University) on fractal analysis. A new development at conferences that I hadn't seen before was several people in the audience using digital cameras to take photographs of the presentation slides.

Friday was the SGA open session of one plenary talk by Jeff Hedenquist and then three concurrent sessions of 54 papers in 20 minute time slots. Tony Christie presented a paper on "Paleodepth assessment of epithermal gold deposits in NZ" coauthored by Bob Brathwaite. A particularly impressive paper was by Chris Wijns et al. (UWA) on "Compressional tectonics of the Carlin gold trend" that included movies of various cross sectional structural models representing effects of regional compression.

Sixty seven technical posters were displayed in a hall where tea and coffee were served. Donna Falconer won a prize for her poster "QPC gold placers in New Zealand: analogues for Witwatersrand-style gold deposits?" coauthored by John Youngson and Dave Caw. Mark Simpson presented a poster on "The Waihi and Favona epithermal Au-Ag deposits, New Zealand: A paleogeothermal system with two upflow zones" coauthored by Jeff Mauk and Anne Morrell.

In the commercial exhibits section, Rocklabs was the only New Zealand exhibitor amongst the various service companies, explorers (Anglo American, Placer Dome and WMC), geological surveys (Geoscience Australia and the state Geological Surveys; and Geological Survey of Finland) and CSIRO.

The social programme was comprehensive, with an event held on all but the last evening of the conference: the Hydrothermal Fluid Society, SEG's informal wine tasting group (<http://home.comcast.net/~yuanmeinert/Perth2004/Perth2004.html>), on Sunday; the Welcome Function on Monday; the SEG Awards Dinner on Tuesday; and the SEG Conference Dinner in on Thursday. The latter was a bit of a disaster because the venue, the Guild Hall at UWA, proved to have very poor acoustics resulting in a horrendous background din of conversation, which made conversing with others at same table very difficult. Probably because of this problem, there were no speeches or announcements, making the evening rather flat. In contrast, the SEG Awards Dinner was a very lavish affair, held in a large functions room at the Esplanade Hotel in Fremantle. The main event of the evening was a series of award citation and acceptance speeches. The venue proved excellent for getting around and talking to others following the speeches and dinner.

PACRIM Congress, Adelaide 20-22 September, 2004 *Bob Brathwaite*

It was the turn of Adelaide to host the once every 4-year PACRIM Congress run by the AusIMM. Numbers attending, at about 220, were somewhat down due to the Society of Economic Geologists conference in Perth two weeks later. Nevertheless, the congress organisers led by Trevor Ireland put together a strong technical program under the six themes of: 1) Deposit Models and Regional Reviews, 2) Discovery Techniques and Regolith, 3) Exploration and mining Geology – Case Studies, 4) Industry Challenges – Globalisation, Communities, Developing Countries, Financing Exploration, 5) Looking to the Future – Sustainability, Education and Skills, and 6) Transition Issues – Discovery to Profitable Operations. In addition there were 15 keynote addresses.

The Congress was held in the Adelaide Convention Centre and was run at the same time as an "Eastern Australian Basins Petroleum Conference". Trade stands, poster displays and refreshment facilities were in a shared room, which made for an interesting mix of conversations on the latest petroleum plays versus new epithermal gold or porphyry copper discoveries. A bank of internet computers were however restricted for the use of the Basins conference delegates – we mining types were kicked off by the security heavies, whose constant presence was a reminder of the heightened security in present day Australia. The conference papers were available at the conference as a proceedings volume (487 pages in all)

and a CD, which strangely was an extra charge as the CD was not included in the registration fee.

The opening address by the Premier of South Australia Mike Rann was particularly upbeat in announcing substantial new money for encouraging mineral exploration in the state. Notable keynote talks from my perspective were on the giant El Teniente Porphyry Cu-Mo Deposit in Chile by David Cooke (University of Tasmania), Epithermal and Porphyry Gold Models by Greg Corbett, Advances in Research on the Regolith (the stuff that covers most of Australia) by Dennis Gee, Recent Advances in Geophysical Tools by Bob Smith, and Modern Solutions to Old Day Mining Problems (subsidence of the Waihi underground workings) by Basil Morrison of the Hauraki District Council.

In addition to Basil's talk, New Zealand was represented by papers on the Macraes gold deposit by Dave Crow, Prospectivity Mapping using GIS by Greg Partington, the Favona Au-Ag Deposit by Laurence Torckler, Environmental Research in New Zealand's Mineral Industry by Amanda Black, and the Sams Creek Gold Deposit by Bob Brathwaite.

Other Kiwi geologists gave presentations on the Alteration and Mineralisation in the Northern Carlin Trend, Nevada (Terry Leach), and on gold exploration in Vietnam by Mike Banks and Mike Erceg. Terry Leach has recognised a zonal alteration/mineralisation sequence which appears to be an important tool in exploration of the Carlin deposits. Overall the papers presented were excellent, but because of running three concurrent sessions for much of the time there were numerous clashes talks on similar topics.

Social events included a welcoming function in the Mawson Minerals Gallery of the Museum of South Australia, with its world class collection of minerals, and the conference dinner at the Australian Wine Centre. Ian Gould gave his talk "the new limits to growth" at the conference dinner.

A new School of Mines? *Paraphrased from an email from Pete Gunn*

There has been some debate recently about whether a School of Mines should be established at the University of Canterbury. New Zealand formerly had a well recognised School of Mines at Otago University which became subsumed into the Department of Civil and Environmental Engineering at Auckland University.

There is a resurgence in underground mining activity and proposed mines at present with Spring Creek, Roa, Pike River, Huntly East, Reefton Blackwater, Macraes, and Favona. Additionally, there are opencast plans for Cypress Block in the Buller, Whareatea, Globe progress and the Macraes extension. With much of this activity being South Island based, a South Island School of Mines can be justified and the University of Canterbury, a good option because of the capacity to integrate geology, economics and engineering skills within the one campus. Does the wider membership have any views on this? If so please let me know so that options can be canvassed. Emails to the editor cavem@paradise.net.nz.

Mining in the News

Employment

The pace of growth in mining on the West Coast is causing problems with staffing and housing. There are plans to construct new kitset housing in Reefton because of the house shortage which has been exacerbated by the growth of dairying in the area. Staffing is also a problem with Solid Energy planning to bring in miners from the UK. The shortage of staff may become even worse when Pike River begins operations in 2005. Meanwhile OceanaGold is advertising for staff including geologists and mining engineers.

Minerals

OceanaGold has appointed mining engineer Stephen Orr as chief executive. OceanaGold which operates the Macraes goldmine in Otago, has started work on the Blackwater mine near Reefton and is planning mining at Globe Progress. OceanaGold's chairman, Kerry McDonald said that Mr Orr was an excellent appointment and that he was charged with doubling the company's production to more than 350,000 oz pa and to expand the company internationally. OceanaGold raised \$112m in a public float in March. The South Island goldfields produced 93,330 oz of gold at a cash cost of A\$320 an oz in the previous 6 months. Trading profit for the half year was A\$17m with a forecast full year pre-tax profit of A\$26.2m. Net profit for the June half year was A\$10.92m. *Press 27 Jul 04*

West Coast miner Glenharrow Holdings has lost its appeal regarding rights to mine greenstone on Razorback Ridge on Mt Griffin and was also ordered to pay costs to the Crown and Ngai Tahu. Glenharrow took the case to the Privy council after the Appeal court overturned a High Court ruling which restored Glenharrows mining right. Glenharrow and several other miners lost access to their mining licences granted under the 1971 Mining Act when the greenstone was vested in Ngai Tahu as part of the 1997 treaty settlement. *Independent 28 Jul 04.*

Public ressure has caused the Thames Coromandel District Council to have a change of mind over mining. In an Environment Court hearing in May 04, the council stated that it wanted to reclassify underground mining as a discretionary activity. The Court agreed to the reclassification allowing miners to apply for consents to underground mine in the Coromandel. The council has since decided to appeal the decision but can only do so on points of law. *Herald 20 Aug. 04.*

Heritage Gold was fined \$30,000 after an employee was overcome by carbon monoxide poisoning while working in the Talisman mine in the Karangahake Gorge. OSH found that the incident arose from inadequate ventilation causing the build up of fumes from petrol engines on a loader, quad bike and generator. *Herald 25 Aug. 04*

Aurora Minerals has began work on several NZ projects including an area adjacent to Macraes, projects near KeriKeri and at Rockville in Golden Bay. *Herald 22 Oct. 04*

Development work on the \$76m OceanaGold project at Blackwater began in July and was planned to be completed before the end of 2005. In mid November, however, OceanaGold called in some Canadian experts, McIntosh Engineering, after encountering an unexpected blockage in the Prohibition shaft. Progress with refurbishing the shaft has been slower than planned with the blockage causing delays of up to 2 months. *Press 25 Aug. & 19 Nov. 04*

Work has began on Newmont Gold's Favona decline. The contract for the first 800m of the decline has been awarded to Henry Walker Eltin. Newmont has spent \$18m on exploration and feasibility studies for Favona which will employ around 20 people and extract 3 m tonnes of ore over the mine's life. *Dominion 17 Nov. 04*

Coal

In June the Buller District and West Coast Regional Councils granted approval for Solid Energy's Cypress mine in the Buller. The consents allow for the extraction of about 5MT over the mines 10 year life. Solid Energy plans to rehabilitate the site progressively, create a fully fenced Powelliphanta habitat and remove predators from the area. Greenpeace and Green Party MPs have condemned the decision linking the permit granting to the perceived threat of global warming. Several groups objecting to the consents said an appeal was likely. *Press 22 June 04*

A LTSA report states that the Midland line critical for the export of coal was in a poor state and not fit for purpose beyond the immediate future. Solid Energy stated that up to \$70m needed to be spent on deferred maintenance to bring the line back up to scratch. The problems with the line will also pose problems for other miners such as OceanaGold who planned to ship partially processed ore to Macraes for final processing. *Press 25 June 04*. Meanwhile problems with transport is forcing Francis Mining to move to barging. Brent Francis said that his company had been completely shut out of access to the Midland line and has contracted to barge 1 MT of coal to Port Kembla. *Grey Star 2 Nov. 04*

Appeals to the granting of consents for the Cypress Mine were lodged by Forest and Bird, Ngakawau Riverwatch, Buller Conservation Group, and the Department of Conservation. Solid Energy has also lodged an appeal objecting to some of the conditions imposed. Key issues in the appeals relate to water quality, protection for the Powelliphanta Kiwi while Solid Energy is objecting to the amount of the bond which is set at a minimum of \$5m pa. *Grey Star 12, 13 July 04*

Meanwhile the West Coast Regional Council has given Solid Energy more time to present a fire management plan for its troubled Strongman mine but will also more pro-actively monitor all of Solid Energy's operation mines. *Grey Star 13 July 04*

On August 04, *the Independent* reported on the plans for Terry Birchfield a former West Coast coal miner to continue court action against Solid Energy relating to the loss of mines in the 10 Mile after collapses of the escarpment adjacent to the Strongman #2 mine.

Port of Marlborough is pushing ahead with plans to tranship up to 2 MT of coal pa through Picton with this mainly coming from the Pike River mine. The port company noted that there were local concerns at the proposal and that consultation was planned. *Grey Star 30 Oct. 04*

Solid Energy has reported a 40% drop in net profit in the most recent financial year but does not regard this as a concern. A record 4.21 MT of coal was sold during the period which is 3% higher than the previous year with both local and international sales increasing. The rail link between the West Coast and Lyttelton was constraining further growth and Solid Energy is looking at its own ships to offset this constraint. This year's result was affected by unfavourable exchange rates as the Kiwi has strengthened against the US\$. *Press 5 Nov. 04*

Solid Energy was in the news in November with its problems at the Strongman mining area when articles were published in both the Press and Dominion describing the difficulties in controlling the fires burning in this area. Dominion Post 6 November 04 In relation to this mining licence the West Coast Regional Council has increased the bond from \$930 to \$3m and has indicated that the bond would remain in place for as long as problems with the area continue. *Grey Star 17 Nov 04*

Also in Greymouth, Solid Energy announced the stopping of mining at the Spring Creek mine due to the risk of spontaneous combustion and difficult geology. Solid Energy is using the shut down to undertake a full review of the mine. Orders from contracted is expected to be met by stockpiles and production from other mines. Development drivage will continue. *Grey Star 17 Nov. 04.*

Quarries

Residents at Plimmerton have expressed anger at a proposal to re-open the Plimmerton Quarry. The operator, Atom Hire, has obtained approval from the sites Maori landowners to investigate an alternative access route. Atom Hire would still need to apply for a resource consent to re-open the quarry. *Dominion Post 28 July 04*

The Environment Court has rejected evidence from local iwi objecting to the development of a quarry at Kopironui, near Woodhill on the Kaipara Harbour. The judge was critical of the evidence stating that it was unreliable and inconsistent, and noting that everyday activity and long-lost random burials should not prevent the land owner from undertaking a new activity on the land. *Herald 14 Aug 04.*

Environment Waikato and the Waikato District Council have granted consents for a large sand quarry at Horotui. This was despite objections from 53 landowners and Transit NZ. Transit's concerns centred on traffic volumes and the impact this would have on road safety as up to 160 heavy truck transits of the Horotui Road/State Highway 1 intersection daily. *Herald 24 Nov 04.*

Residents and the local councils are opposing a plan to expand a gravel quarry on the outskirts of Christchurch. Road Metals is proposing to extend an existing quarry and has the approval of adjacent landowners but the Canterbury Regional Council which is concerned at the expansion being outside the Yaldhurst special quarry zone and the potential impact on aquifers. *Press 8 Nov 04.*

Photograph of the month (Stolen from NZ Mining Update)
Wilsonville Quarry, Northland >

MURRAY STEVENS
BSc, MSc (Hons), Dip Geol Sci, M Aur IMM

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CONSULTANT

GEOLOGICAL EVALUATION
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AusIMM members assisting and supporting each other through mentoring.

The AusIMM Mentoring Programme

Mentoring is -

helping someone to understand more fully the environment they find themselves in, to assist and support them in advancing their career and life in general, and learn from every day experiences.

- We are all different people with different experiences and different expectations. The Mentoring Guidelines are provided to assist members to have a reference point for their relationship and expectations.
- The Programme is a holistic, integrated career and mentoring resource for AusIMM members of all ages. The AusIMM is providing its members with a comprehensive series of career profiles of members willing to act as mentors to other AusIMM members. By profiling our mentors in this way, members can readily identify the people they wish to ask about a wide variety of different issues such as work/life balance, technical advice, career progression and so on.
- Each Mentoring relationship will be different. Mentoring may be face to face, via telephone or electronically. It may be short term or long term, A quick question or an ongoing relationship. As the relationship grows you will work out what works best for both of you.
- The AusIMM Mentoring Programme is a National Programme, assisted by a Central Services Mentor Secretary and by materials available from The AusIMM website. Mentoring Material available from The AusIMM website will include meeting record sheets and checklists for setting goals and expectations, The Mentoring Manual and a list of all Branch Mentoring Contacts.
- Try to find your own Mentor using your own networks or the Mentor Profiles provided on the Members only section of The AusIMM website. If you think you have found a possible Mentor you can approach them directly, or alternatively let the Central Services Mentor Secretary or relevant Branch Mentor Contact know and they can approach them for you.
- Members struggling to find a suitable mentor; let your Branch Mentor Contact or the Mentor Secretary know and they will suggest a possible Mentor.
- Mentors and Mentees will be eligible for CPD on time involved in mentoring. Be careful to record time spent for CPD requirements.
- Don't panic! Direct advice and guidance with any problems can be obtained from the Mentor Secretary.
- All participants must be current members of AusIMM.



If you have any queries about these guidelines, the programme or would like to be involved, please contact Graeme Fulton the NZ Branch Mentor Contact
Email: graeme.fulton@xtra.co.nz or Mobile: 021 380-624

The mentoring link is based on trust, honesty, and truthfulness.

It is therefore, understood that all information shared within the relationship between the Mentor and the Mentee remain confidential.

New Zealand Minerals Conference 2005



Realising New Zealand's Mineral Potential

Auckland, New Zealand 13-16 November 2005

www.crownminerals.govt.nz
www.ausimm.co.nz



First Announcement and Call for Papers

This international conference, co-convened by Crown Minerals, Ministry of Economic Development and the New Zealand Branch of the AusIMM, will examine the case for investing in New Zealand. It will include the regulatory and commercial aspects of the investment environment as well as studies of New Zealand's mineral potential, geology and mining operations, and related international topics. Complementing the conference will be opportunities to visit some of New Zealand's mineral and coal deposits and mining operations.

The conference will focus on six main themes:

1. New Zealand as an investment opportunity and its place in the world
2. Geosciences, exploration potential and case histories
3. Environmental management and the regulatory framework
4. The gold industry
5. The coal industry
6. The business of the minerals industry (legal and commercial issues).

Additionally, there will be:

- Trade exhibits
- Field trips to coal mines, epithermal gold deposits and active geothermal fields in the North Island, and orogenic lode gold deposits in the South Island
- Short courses (details to be announced).

Watch www.crownminerals.govt.nz and www.ausimm.co.nz for programme developments.

Abstracts (up to 300 words) due by 14 March, 2005. Abstracts and papers will be published in a proceedings volume available at the conference. To express interest and for more information contact: Minerals Conference Organiser, Crown Minerals, PO Box 1473, Wellington New Zealand. Email: crown.minerals@med.govt.nz

PLEASE SEND ME MORE INFORMATION ABOUT THE NEW ZEALAND MINERALS CONFERENCE 2005

NAME:.....ORGANISATION:.....

MAILING ADDRESS:.....

PHONE:.....FAX:.....EMAIL.....

Tick Preferred method of reply.....

- I am interested in presenting a paper at the NZ Minerals Conference.
- I am interested in attending the NZ Minerals Conference, please send circular/registration form.
- Please send me the conference sponsorship proposal.
- Please send me information about trade exhibits.
- I am interested in pre and post conference tours.
- I am interested in presenting a short course.
- Please send me information about visitor attractions in New Zealand.

Return to:

Minerals Conference Organiser
Crown Minerals
P O Box 1473
Wellington
New Zealand

Or by fax to: + 64 4 4710187



**CALENDAR OF EVENTS
2005**

<i>Month</i>		<i>Action</i>
January	<ul style="list-style-type: none"> • Compilation of Branch finances. • Audit of Education Endowment Trust Fund. 	<ul style="list-style-type: none"> • Bob Brathwaite • John St George.
February	<ul style="list-style-type: none"> • NZ Branch meeting. 	<ul style="list-style-type: none"> • Committee.
March	<ul style="list-style-type: none"> • School science fairs - Establish contacts (23 regions). 	<ul style="list-style-type: none"> • Tony Christie.
April	<ul style="list-style-type: none"> • Call for applications to the Education Endowment Fund. • New Leaders conference - Brisbane 	<ul style="list-style-type: none"> • John St George. • Nicola Cummack.
May	<ul style="list-style-type: none"> • School science fairs – Dispatch of Prizes. 	<ul style="list-style-type: none"> • Tony Christie.
June	<ul style="list-style-type: none"> • AusIMM award nominations. • Call for nominations for NZ Branch committee. • NZ Branch meeting. 	<ul style="list-style-type: none"> • Committee. • Dave Stewart. • Committee.
July	<ul style="list-style-type: none"> • AusIMM Congress – Hunter Valley 	<ul style="list-style-type: none"> • Vivienne Bull, Roger Gregg, Chairman
August	<ul style="list-style-type: none"> • Education Endowment Trust applications close and awards made. • Notice of AGM mail-out and committee nominations (early to mid August). • Notice of motion to amend Branch Rules (if any). • NZ Branch AGM. • NZ Branch committee meeting. 	<ul style="list-style-type: none"> • John St George. • Dave Stewart. • Members. • Committee.
September		
October		
November	<ul style="list-style-type: none"> • AusIMM NZ Branch Annual Conference combined with NZ Minerals Conference and convened with Crown Minerals (13-16 Nov); including. <ul style="list-style-type: none"> ○ Students paper prizes. ○ S&YP forum. ○ Launch of AusIMM monograph 25 • NZ Branch committee meeting. 	<ul style="list-style-type: none"> • Committee.
December	<ul style="list-style-type: none"> • Atlas Copco Scholarships. Applications close 31st December). 	<ul style="list-style-type: none"> • Committee.



AusIMM New Zealand Branch Business Plan 2005

Technical Events

- AusIMM NZ Branch Annual Conference combined with New Zealand Minerals Conference, November 13-16
- Evening lectures in each of the regions spread though the year. Organisers;
 - Auckland (4 sessions) –Vacant.
 - Wellington (4 sessions) – Tony Christie.
 - Christchurch (2 sessions) – Peter Gunn.
 - Dunedin (1 session) – Ron King.
 - West Coast (1 session) –Richard Cotton.

Social Functions

- Social functions associated with Annual Conference.
- Drink sessions and/or dinners associated with regional evening lectures.

Students & New Professionals (S&NP)

- Student paper prize at Annual Branch conference – John St George.
- Initiation of S&NP network - Nicola Cummack.
- Initiation and promotion of S&NP mentoring programme – Nicola Cummack.
- Technical and social events as organised – Nicola Cummack.

Membership Drives

- Promotion at NZ Branch annual conference.
- Promotion at regional evening sessions.
- NZ Company and site visits by Central Services (CS), Manager Branches & Membership and other CS personnel – Dave Stewart.

Education

- Extractive Industries Training Organisation Board representation.
- School science fair prizes and judges where appropriate (23 regions) – Tony Christie.
- Secondary school geological field trip associated with Annual Conference as and when organised.
- Secondary school environmental and operational field trips as and when organised.

Heritage

- Dave Arbury files of Coromandel geology/mining to be digitised and put on CD for NZ Members.
- Heritage sites to be considered on case by case basis for support/financing as recommended.

Other

- NZ Branch Newsletter; three issues per year –Murry Cave.
- NZ Branch Website development and management – John St George.
- Submissions and lobbying as and when required.
- New edition of Monograph 25 “Geology and exploration of New Zealand mineral deposits” edited by Tony Christie and Bob Brathwaite.



Trace Elements Conference

17-18 February 2005

Rydges Le Grand Hotel
Hamilton
New Zealand

The scientific programme will include all aspects relating to trace elements.

Topics include, but are not restricted to:

- Trace elements in agriculture/horticulture
- Trace elements in the environment
- Trace elements as contaminants
- Trace elements in Health & Disease
- Modern analytical techniques for measuring trace elements

Plenary speakers will include

- **Dr Joe Brenner**, Scientist Adviser and Consultant, Israel "Instruments for trace element analysis"
- **Dr Bill Maher**, Professor in Environmental Chemistry at the University of Canberra, Australia "Metal speciation for environmental monitoring"
- **Dr Julian Lee**, Agresearch, Palmerston North "Trace elements in agriculture"
- **Dr Richard Vanoort**, ESR Christchurch "Trace Elements in Health and Disease"

Other speakers will include Dr Nick Kim, Environment Waikato.

The Trace Elements Conference will offer the best opportunity to present and discuss your results to a broad audience from the trace element community in New Zealand, and overseas. It will also be a forum to see the latest technology from a number of instrument manufactures.

For more information, or to register or submit an abstract, visit www.hill-laboratories.com and follow the Sponsorship link to the Trace Element Conference 2005 pages.



The Australasian Institute of Mining and Metallurgy - NZ Branch Education Endowment Trust

Trustees Report 2004

Trustees: John St George (Chairman), Stuart Rabone (Secretary - Treasurer), Vivienne Bull, John Hogan, Richard Barker and Dave Stewart (ex officio).

The Trustees made three award for the current academic year however only two were taken up. These were:

Joseph Hughes studying for an MSc in Environmental Science, University of Otago.
Research area: Environmental geochemistry of Stockton Mine and implications on water quality.

Andrea Todd studying for an MSc in Geology, University of Otago. Research area: Hydrogeology and revegetation of an historic mine site.

The Trustees are pleased to report another successful year in increasing the level of funds in the Trust to enable further scholarships to be made to students for mining/geology research.

The Trust would like to thank Waihi Gold (Newmont) and Goughs for their continued support, as well as NZMIA, GRD and IGNS; Wendy Hampton and Lloyd Jones for personal contributions and all those who helped by bidding and purchasing items at the auction. We also received a payment from Central Services of \$10,000 at the end of last year. At present the Trust funds are \$82,239.70.

This year we are currently reviewing the applications for awards and hope to be able to announce the successful candidates during the conference.

John St George
Chairman of Trustees

Trust Secretary: Stuart Rabone

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