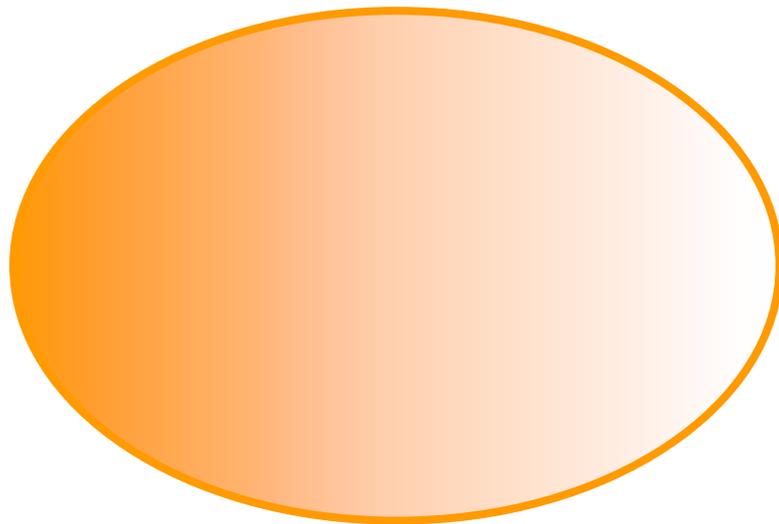


Century Zinc Mine

Northwest Queensland, Australia



Written and compiled May - August 2002

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Some quotable quotes

- p.4: “Century is about an hour’s flying time north of Mt Isa, but geologically is a few light years away from Mt Isa in terms of the respective appearances of the sediment-hosted ore types. . .”
- p.9: “Abrupt bends in the Apparent Polar Wander Path reflect movement and rotation of the Australian Proterozoic plate. . ., and such rotation can be interpreted to create intraplate stresses, the latter manifested as breaks in sedimentation, changes of basin shape and accommodation rates, and in triggering of circulation of metalliferous basinal brines. . .”
- p.11 “Bluebush prospect is a sub-economic but very large (many times more metal than Century) accumulation of diagenetic Zn mineralisation in a fault-bounded third-order basin 10 x 7 km. Neither Bluebush or Century were found by any of the new studies of basin analysis and sequence stratigraphy, but future discovery will almost certainly be based on this new understanding. . .”
- p.13 “thus we extol the virtue of the 1:100,000 scale geological map. While we are quick to endorse the new understanding of the evolution of the Lawn Hill Platform, and its exploration use under cover, we are also of the opinion that if the reputation of these maps is as a bright and brilliant light, then we, as explorationists, should also practise at being a moth, attracted for at least some of the time to practical results of one of the most worthwhile of geologic endeavours. . .”
- p.23 “. . . at the Silver King lodes in 1961, the single largest cost factor was road freight – 262 miles to Mt Isa . . . over rough dirt tracks in 7 ton trucks, at a cost of £8/10/- per ton, a journey designed to break not only the wallets but also the hearts of these ten redoubtable Poles; in 1961 dollars, these men were being housed and fed for \$1.50 per day!! . . .”
- p.27 “Because outcrop samples did not contain percent levels of Pb and Zn, this seems to suggest that (in gossan assessment) CRA were using an extraordinarily high cutoff value for Zn and Pb levels in prospective rocks. . . .”
- p.29 “ On 17 April 1990 Mr Mark Hartley, a staff geologist at Mt Isa, sent Mr John Main a routine fax saying that significant stratabound sphalerite mineralisation was detected at Target 1 (*later to be Century*), which may develop into economic concentrations downdip as the strata approaches the junction of the Termite Range Fault and the keel of the Pages Creek syncline. . .”
- p.34 “. . .Pasminco commenced production in a period of strongly declining zinc prices. At the current zinc price of US\$810 to \$750/tonne Century apparently can book an operating profit, but only just. . .”
- p.37 “. . . the term Cappuccino Zone refers to the mottled brown discoloration of this (siderite) unit in the oxidised zone, supposedly similar to the brown and white mottled froth that some poor souls consider to be coffee. Next we will experience a zincachino.”
- p.44 “Because of the emphasis on a source-reservoir concept by Broadbent et al., 1998, we must assume that if there was any reservoir migration of oil at Century, migration distances have been a matter of millimetres and centimetres rather than metres and kilometres. . . .”
- p.46 “ The zone of most intense mineralisation, where the highest grades and both porous and non-porous sphalerite coexist, is interpreted to represent the gas/oil interface in a palaeo-hydrocarbon reservoir system. . .”
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- p.48 “there can be little doubt from metal zoning and ankerite-siderite distribution that the Termite Range Fault structure, and in particular the SW side of it, was a key regional element in the formation of the Century deposit; the ore fluid(s) were especially enriched in Zn, Pb, Fe and Mn, and focussed on the Century interval because of the presence of an organic-rich shale component in unit H4S, which became an active hydrocarbon reservoir by interaction with the warm to hot hydrothermal fluid. . . “
- p.55 “. . . Perhaps the greatest current single advantage of current modelling concepts is that they may provide fruitful office-based employment for exploration staff while they struggle with the vagaries of Native Title legislation to gain access to exploration land. To date in Queensland, this has taken nearly 6 years to accomplish (1996 – 2002). . . “
- p.66 “. . . does the fluid first seek out the carbonaceous laminae as having more micropermeability and an abundance of intrinsic carbonaceous matter and introduced pyrobitumen? does it then, if permeability in the siltstone is occluded by mineralisation, move sideways or along the sideritic layers and begin to mineralise them, albeit with a clear and inclusion-free sphalerite? And in all of this, is the gas-oil interface static or is it migrating vertically with time?. . . “
- p.68 “The zone of most intense mineralisation, where the highest grades and both porous and non-porous sphalerite coexist, is interpreted to represent the gas/oil interface in a palaeo-hydrocarbon reservoir system. . . “
- p.73 “. . . The dominant sphalerite type, as seen in reflected light, is a grey, very fine-grained ?cryptocrystalline mass with microporous texture and extensive ultrafine carbonaceous inclusions – the POROUS SPHALERITE. Contemporaneous with this sphalerite species, or slightly post-dating it, is a pale-coloured translucent sphalerite that may be bitumen-poor, our NON-POROUS SPHALERITE, apparently controlled by layers of porous sphalerite and carbonaceous siltstone. A third type, TRANSITIONAL SPHALERITE, is pale coloured but contains a moderate amount of carbonaceous inclusions, but not as the streaky form of carbonaceous matter. . . “
- p.83 “. . . Our images may also contribute to the debate which occasionally arises between Australian and North American researchers as to the origin and timing of deposits such as Isa mine, and Century - some in North America are less accepting of a diagenetic replacement origin for these deposits than are Australian geologists, so let us bring on the debate. . . “
- p.92 “. . . This author (e.g. Derrick, 1996) is a proponent of both rift related synsedimentary and diagenetic replacement origins, depending on where the evidence may lead, but rejects strongly the epigenetic replacement origins for Isa mine proposed, for example, by Perkins (1999), who claimed the Isa mine Pb-Zn and Cu orebodies formed syntectonically at 1500 Ma. Century is simply pushing the limits as to the nature and longevity of diagenesis; . . . “

Reference:

Broadbent, G.C., Myers, R.E., & Wright, J.V., 1998 Geology and Origin of shale-hosted Zn-Pb-Ag mineralisation at the Century deposit, northwest Queensland, Australia. *Economic Geology*, v93 (8), pp 1264-1294
