

David Duckworth

Qualifications Bachelor of Science Honours degree in Geology

Master of Science Degree in Mineral Exploration and

Mining Geology Chartered Engineer

Affiliations Member of the Institution of Materials, Minerals and

Mining

Year of Birth 1956

Nationality British

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Current Position at CWA

Consultant

David has over 35 years of experience in the minerals and metals industries, working as mining and exploration geologist in Namibia and as a market consultant with various organisations in London. He has been an associate of GWA since 2011, drawing on his broad experiences to provide solutions to shipping problems presented to CWA.

Specific Expertise and Experience at CWA

The following summary lists some of the projects that David has assisted with or led since joining CWA:

Cargoes

Alumina Auto fluff Bauxite
Cement Cement clinker Coal
Columbite Copper concentrate DRI (B)

DRI (C) Fly ash Iron concentrate
Iron ore fines Lead concentrate Lead/silver concentrate

Limestone gravel Nickel laterite ore Petroluem coke

Potash Pyrites Pyritic ashes/calcined pyrites

Salt Sodium sulphate Steel and steel scrap

Tantalite Zinc concentrate



Incidents

Incidents with which David has been involved include:

- Cargoes damaged/contaminated by seawater
- Cargo liquefaction
- Rejection of loaded cargoes
- Damage through incorrect handling procedures
- Valuation of damaged cargoes
- Disputes over the commercial aspects of metal concentrate sales contracts

Summary of Previous Employment

2011-present Saint Barbara LLP (London)

David joined Saint Barbara LLP in 2011 as geologist, market consultant and partner. With his expertise in geology and commodity markets David has been involved in assignments covering review, assessment and evaluation of projects for potential investors, advice on base metal concentrate contracts and commodity market studies.

1990-2011 CRU International Limited (London)

During this period, David was a Principal Consultant with the Base Metals Copper Team. His main responsibilities were:

- Overall responsibility for Copper Production Team employing a team of three and publishing three regular products with a turnover of £300k.
- Editor and contributor to the Copper Studies monthly publication with a turnover of £60k/y and 40 subscribers.
- Responsibility for Copper Raw Materials Production Database (CuRMAt) for copper mine, smelter and refinery production data. Contains over 3,000 profiles.
- Providing continuous "expert opinion" within the Group on production of the top 100 copper mines and miners around the world.
- Liaison with other CRU Teams (British Sulphur, Non-Ferrous and Steel) to ensure data consistency and maximum commercial value is derived from the CuRMat Database.
- Coordination of the collection of key production and consumption data in mining markets.
- Performing detailed analysis and interpretation of data to help generate forecasts for supply, demand and prices.
- Responding to ad hoc client and internal requests for information and opinion in a timely and professional manner.



- Project management to deliver reports to required standards and to budget.
- Ensuring production data presented in company publications is succinct and easy to understand using methodology that is easily explainable to clients by all levels within the Copper Team.
- Undertaking research visits to companies worldwide.
- Attending and presenting at relevant conferences worldwide.
- Leading periodic one-to-one interaction with key clients.
- Creating and building client relationships leading to new product and single client business.
- Assisting the Copper Team in market research on ore, raw materials, refined and semis products.
- Assisting the Consultancy Team with ad hoc projects on mining, smelting and refining.
- Consultant to CRU's copper mining, smelting and refining cost work

1986-1990 Roskill Information Service Limited (London)

During this period, David was a Senior Consultant and his main responsibilities were:

- Compilation of Roskill studies on metals and minerals, including Sodium Sulphate, Barytes, Strontoum Salt, Perlite, Vermiculite, Fluorspar, Radin, Aluminium, Bismuth and Beryllium
- Involvement that stages of production from initial research to final publication including proof reading.
- Collegion and analysis of data from in house and external sources, libraries and databases.
- The terviewing representatives of UK companies for single client studies.
- Answering technical enquiries from clients.
- \ Attending conferences.
- \(\right\) \Assisting with telephone\surveys.
 - Author of articles on Salt and Beryllium published in the Mining Annual Review, 1987 to 1990.
- \ Supervision of junior staff.
- Supervision of office building and services.

1980-1985

Tsumeb Corporation Limited (Tsumeb, Namibia)

On graduation, David took up a post in Namibia working as a geologist on an underground base metals mine and also exploring for base metal and gold deposits. His main responsibilities were:

1. Mining:

- Underground mapping, stope and grade control.
- Core logging, planning and drilling programmes.



- Interpretation of plans and sections.
- Ore reserve calculations.
- Feasibility studies.

2. Exploration:

- Geological mapping.
- Planning and supervision of drilling, geochemical and geophysical programmes.
- Supervision of field crews and camps (up to 30 people).
- Interpretation of data and compilation of reports for management and government.

Conference Papers Presented

Copper Ore Mining and the Global Crisis
International Copper Ore Mining Congress, Lubin, Poland, 24-26 September 2009

Copper market outlook
MinSouth/IMMM Commodity Day - Copper, 22 November 2007

Mining Annual Review
Author of articles on Beryllium, 1987-1990

Mining Annual Review
Author of articles on Salt, 1987-1990