

R. (RICHARD) WRIGHT, P.ENG

MANAGER, UNDERGROUND MINING



EDUCATION

M.Sc. Mining/Geotechnical University of Alberta, 1981

> B.Sc. Mining Engineering Royal School of Mines London, UK, 1977

B.Sc. Engineering Science University of Leicester UK, 1974

LICENSES AND CERTIFICATIONS

Professional Engineer Alberta: No. M6414 British Columbia: No. 30821 Colorado: No. 23600

European Engineer No. UK/IMM/EE/94/8852

Chartered Engineer in UK No.410430

Associations UK Institution of Mining and Metallurgy (IMM)

Canadian Institution of Mining and Metallurgy (CIM)

American Society for Mining
Metallurgy and Exploration of
AIME (SME)

PROFESSIONAL HIGHLIGHTS

Mr. Wright has over 35 years of mining/geotechnical related experience in operations, engineering and consultancy associated mainly with underground mines in the USA, Canada, South Africa, Mexico and the UK. The majority of this experience has been directed towards underground mine engineering, planning and geotechnical aspects of mine design and rehabilitation.

His recent experience with Norwest includes over ten years with emphasis on underground coal mine engineering and feasibility worldwide, and rehabilitation of underground mine workings in Alberta. He was project manager for two years assisting an underground longwall coal expansion program in Mexico. He has also spent five years in the USA progressing coal prospects from the feasibility phase through to operations planning and engineering, including a mine that has recently been setting world longwall production records. In addition he has about 10 years of consultancy experience covering geotechnical, mining and ventilation engineering for a variety of projects and clients, including design, engineering, feasibility, planning applications, public inquiries and mine rehabilitation.

WORK EXPERIENCE

NORWEST MINE SERVICES LTD., CALGARY, ALBERTA 1998 – PRESENT MANAGER, UNDERGROUND MINING

- Engineering and Management of underground mining and geotechnical projects.
- Providing operational and planning assistance with emphasis on underground coal mine design and planning, assessment of old mine workings, mine rehabilitation, stability of underground openings, blasting vibrations impact and underground coal mine valuation and feasibility.

WRIGHT TECHNICAL SERVICES, REDRUTH, CORNWALL, ENGLAND 1989 – 1998 MINING/GEOTECHNICAL CONSULTANT

Independent Mining and Geotechnical Engineering Consultant with emphasis on coal mining, underground construction and radioactive waste disposal. Projects included:

- Project Manager for operations and engineering assistance for upgrading of existing and new underground coal mines for MICARE, Coahuila, Mexico.
- Design, data evaluation and shaft/tunnel surveying for the planned Sellafield underground radioactive waste repository in the UK.
- Geotechnical site investigations and evaluation of the stability of foundations, slopes and underground openings for a number of clients.
- Ventilation design and monitoring for construction of the UK side



of the Channel Tunnel.

 Various coal and metal mine engineering and planning studies for a number of clients.

JAY MINERAL SERVICES LIMITED, TRURO, CORNWALL, ENGLAND 1987 – 1989 MINING CONSULTANT

Responsible for a variety of mining engineering projects including:

- Various economic evaluations of underground and surface coal and metal mines in the UK and overseas.
- Prediction of blasting vibrations for surface coal mines and preparation of expert witness evidence for the Smotherfly surface coal mine planning inquiry in the UK.
- Pillar design of coal and salt mines in the UK and Ireland.
- Shaft winding and headframe design for underground coal mines and preparation of expert witness evidence for the Hawkhurst Moor underground coal mine public inquiry in the UK.
- Market study for full face hard rock boring of tunnels and shafts.
- Electricity tariff study for gold mining in Ghana.

BATTELLE PROJECT MANAGEMENT DIVISION, COLUMBUS, OHIO, USA 1986 – 1987 SENIOR GEOTECHNICAL ENGINEER

- Assistant Project Manager of a \$10 M contract for underground geotechnical testing as part of the site characterization for a proposed underground nuclear waste repository in salt strata.
- This included planning for major long term tests on the rock mass and engineered barriers in an exploratory shaft facility in Texas, USA.
- The tests were designed to assess the mechanical, thermal, chemical and hydraulic performance under nuclear safety requirement for containment over 10,000 years.

TWENTYMILE COAL COMPANY, COLORADO, USA 1983 – 1986 CHIEF MINING ENGINEER

- Responsible for the mine planning and engineering department of an underground coal mine.
- This involved detailed planning for a 3.2 Mtpa operation with both longwall and room and pillar operations.
- This included ventilation survey and design, geology, geotechnical, hydrology, coal quality, construction, equipment selection, environmental, permitting, financial evaluations, surveying, sequencing and subsidence prediction and monitoring.

GETTY MINING COMPANY, SALT LAKE CITY, UTAH, USA 1981 – 1983 PROJECT ENGINEER

- Responsible for underground coal mine planning, mine design, feasibility studies and exploration programmes for new projects and operating coal mines.
- Developed geotechnical programs for rock characterization and



hazard analysis for mine design and strata control studies.

Anglo Power Collieries, Kriel, Transvaal, South Africa 1977 – 1978 Mine Engineer

• Responsible for an underground coal production section and surface mine planning and engineering of an opencast coal mine (pit design, sequencing, geology, coal quality, etc.).

ANGLO AMERICAN CORP., WELKOM, ORANGE FREE STATE, SOUTH AFRICA 1974 – 1975 MINE OFFICIAL

 Practical experience in production, preparation, ventilation, surveying, sampling and other service departments of deep underground gold mines.

PUBLICATIONS

- A Promising New Concept for Underground Mining of Oil Sands, R.D. Drake, J.D. Watson, H.G. Stephenson and R. Wright, CIM District 5 Conference, Fort McMurray, AB, June 2001.
- Blasting Vibes I and II, J. Stocks and R. Wright, Mineral Planning, UK 1988.
- Technology Management for Risk Minimization, J.D. Spalding, E.N. Thurmond, J.M. Mercier and R. Wright, International Conference on Coal Research (ICCR), London 1982.
- Stability Analysis in Room and Pillar Coal Mining, M.Sc. Thesis, University of Alberta, Canada 1981.