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SUMMARY

I am a geologist with a broad range of exploration management experience, at grassroots and advanced project level, having searched for most types of gold and base metal deposit in a variety of geological terranes. I began my career as a field geologist and rose through the ranks, in just twenty years, to become VP Exploration (Africa) and then VP Exploration (Asia-Pacific) for Anglo American. I was a member of Anglo's Management Committee, which was responsible for global exploration. More recent executive appointments have provided me with a taste of the junior- to mid-tier sector of the industry. I have actively worked in more than 15 countries, on three continents, and have visited as many again on various geological missions.

As an Exploration Manager, I am results-driven and firmly focused on discovery. I am committed to technical excellence and have been an enthusiastic sponsor of research and new technologies when aligned with specific exploration objectives. I understand the importance of cost control and efficient work practice, including proper data management, and am an effective communicator. I have completed many negotiations to secure JVs, strategic alliances, and various business service agreements. I encourage staff development by setting challenging goals and providing appropriate and relevant support (I have taught at MSc level in two universities). While the health and safety of staff must never be compromised and environmental impacts should be minimized whenever possible, I strongly believe that risk mitigation measures should always be pragmatic.

I'm fit and healthy at 64 (I run marathons for fun!) and am married, with three adult children.

QUALIFICATIONS & PROFESSIONAL MEMBERSHIPS

B.Sc. (Hons) Mining Geology, Leicester University, UK (1981)
M.Sc. Mineral Exploration (*with Distinction*), Rhodes University, South Africa (1988)
Management Development Diploma, UNISA, South Africa (1991)
Member Society of Economic Geologists (since 2002)
Director Australian Institute of Geoscientists (Member since 2004)

CAREER HIGHLIGHTS & ACHIEVEMENTS

EXPLORATION & EVALUATION:

- Led team that tripled Anvil's Cu resource base to 2Mt Cu in less than two years, by means of an aggressive drill programme ($\pm 150,000\text{m}$);
- Led team that doubled Azumah's Au resource to 2.2Moz Au within a year;
- Developed robust geological models (and exploration criteria) for Dikulushi Cu, Kinsevere Cu, Boseto Cu, Kunche & Bepkong Au, Julie Au, OKvau Au, on which resource estimates were based.

BUSINESS DEVELOPMENT:

- Established new regional exploration office for Anglo American in Nairobi, Kenya – as a base for target generation in NE Africa (Sudan, Eritrea, Ethiopia, Kenya & Uganda);
- Launched Western Lowlands Au exploration project for Anglo American in Eritrea (abandoned due to outbreak of war);
- Negotiated reciprocal rights deal between Skorpion Mine (Anglo American) and Rosh Pinah Mine – led to the discovery of a supergene oxide Zn deposit (18Mt @ $\pm 10\%$ Zn), which was later mined by Skorpion.

DATA MANAGEMENT:

- Established global geochemical data management solution for Anglo American - with acQuire;
- Developed comprehensive information management system (NMBIS) for Anglo American in Africa - used to attract claw-back deals with junior partners;
- Developed new geochemical database and QAQC protocols for Anvil Mining, Discovery Metals, Azumah Resources, Renaissance Minerals and Auris Minerals – with various software solutions.
- Promoted the initial use of GIS for exploration in Anglo American (early 1990s);
- Established a remote centralized GIS database for Renaissance Minerals – to serve both Cambodia and Perth.

HR:

- Designed and managed a major restructure of the Exploration Division of Anglo American (Africa) in 2001 – reduced staff by more than 200;
- Renegotiated employment contracts for all exploration staff of Azumah Resources – both to reduce company liability & improve employee terms;
- Organized numerous “Exploration Workshops” to promote sharing of ideas, develop and train staff, and build team spirit (for the first time ever in some companies!);
- Taught MSc level courses in Remote Sensing & GIS at Rhodes University, South Africa (1990-92), and Exploration Management at James Cook University, Australia (2016/18/19);
- Currently writing book on “Mineral Exploration Management: What are the Priorities?” (work in progress) – target audience are newly appointed Exploration Managers.

ADMIN & FINANCE:

- Prepared Business Plan and managed budget of >\$20M for Anglo American (Africa) in early 2000s - more recent exploration budgets less for obvious reasons;
- Managed Anvil Mining’s own Drilling Division (with 5 drill rigs) – estimated cost saving ±60%;
- Established numerous management systems in all companies – to promote effective & efficient exploration, with periodic management review.

HEALTH & SAFETY, ENVIRONMENT AND COMMUNITY RELATIONS

- Led team that designed and implemented comprehensive safety, health and environmental management system - awarded ISO14001 and OHSAS18001 certification for Anglo American (A-P);
- Effectively rehabilitated very sensitive desert terrane in the Sperrgebiet, Namibia, after grid-based geochemical exploration by 850 RAB holes – results surpassed official environmental commitments;
- Established early community engagement practices with many potentially affected people on numerous projects (e.g., in DR Congo, Philippines, Botswana, Ghana, Cambodia);
- Successfully cleared prospective sites of illegal artisanal miners in the DRC and Ghana - with no adverse security issues.

EXPERIENCE

NJF CONSULTING LTD

Feb 2009 – Present

SELF-EMPLOYED CONSULTANT (WHEN NOT EMPLOYED)

Preparation of IPO prospectus for Invictus Gold Ltd, focused on porphyry Cu (+Mo) and epithermal Au-Ag in the Drummond Basin, Queensland; Exploration review of Philippines for CSA Global. Advised Ministry of Mines, Cambodia, re new mining law and delivered staff training; paper on Mining Law for CAMEC industry body. **Taught MSc course in Exploration Management at JCU (2016-present)**. Written a **book on Mineral Exploration Management** (to be published by the AIG). Managed first drill campaign for Artemis Resources in Paterson Central district, adjacent to the Havieron Au-Cu discovery (as a consultant associate of Resource Potentials). Contracted to Kainantu Resources Ltd, with three Au & Cu-Au exploration projects in PNG.

AURIS MINERALS LIMITED

Nov 2017 – Jan 2019

GM GEOLOGY (PERTH)

Developed **new exploration strategy**, based on historical data and new geological ideas for Cu-Au in the Bryah Basin. Defined new exploration targets with VTEM, geochemistry and geology. Established new geochem/drilling database. Supervision of ongoing exploration.

RENAISSANCE MINERALS LIMITED

Sept 2013 - Sept 2014

HEAD OF EXPLORATION (PERTH)

Redesigned exploration programmes for intrusive-related Au systems in eastern Cambodia and developed a new 3D geological model for the **Scoping Study of the 1Moz OKvau Au deposit**. Introduced new exploration management systems, including development of new geochemical and GIS databases, routine reporting protocols, and a medical emergency response plan. Completed safety and community relations audits.

AZUMAH RESOURCES LIMITED

July 2011 - July 2013

GM GEOLOGY (PERTH)

Infill drilling on three shear zone-hosted Au deposits in the Birimian of NW Ghana, to update company resource base for **Feasibility Study – doubled Mineral Resource to 2.2Moz Au**. Revived regional exploration programme and resolved artisanal mining problem on site.

DISCOVERY METALS LIMITED

April 2010 – June 2011

GM GEOLOGY & EXPLORATION (PERTH)

Completed MRE for **Feasibility Study of Boseto Cu Mine (100Mt @ 1.4% Cu)**. Redesigned

exploration programme for sediment-hosted Cu-Ag mineralization; one new discovery. Established exploration management systems, including new geochemical database and staff development programme.

OCEANAGOLD CORPORATION

May 2008 - Jan 2009

VP EXPLORATION (PERTH):

Established objectives for expanded near-mine exploration at the Didipio porphyry Au-Cu deposit in the Philippines after completion of Feasibility Study; and redefined the near-mine exploration focus at both the Macraes and Reefton Au Mines in New Zealand.

ANVIL MINING LIMITED

Jan 2006 – Oct 2007

VP EXPLORATION (PERTH):

Led exploration team **responsible for tripling the company's resource base to 2Mt Cu in less than two years**, by means of aggressive drill programme ($\pm 150,000\text{m}$), on the Kinsevere Cu Project, Katanga Copperbelt, DRC. Completed **Feasibility Study of Kinsevere**. Revised the **geological model for Dikulushi Cu-Ag Mine** and targeted orebody extensions. Designed regional Copperbelt exploration, including airborne geophysics, with systematic geochemical and ground geophysical follow-up; completed Au recce into the Kalemie District, along the western shore of Lake Tanganika. Initiated new exploration in the Baguio District of the Philippines, to justify re-opening of the Itogon Au Mine. **Managed Anvil's own Drilling Division (5 drill rigs)**, estimated to save drilling costs by $\pm 60\%$.

ANGLO AMERICAN PLC

Feb 1981 - Dec 2005

VP EXPLORATION (ASIA-PACIFIC) (PERTH, 2004-2005):

Managed team that discovered sedex Zn near McArthur River; supervised successful targeting exercise for Ni in Australia; concluded alliance to re-enter Papua to target Cu-Au porphyries; managed sedex Zn exploration in Rajasthan, India; prepared technical motivation for low key entry into China, targeting Ni; deployed state-of-the-art, proprietary, low temperature squid EM system on selected tenements, to leverage into new Ni projects; **negotiated outsource deal to manage Anglo's geochemical database, globally**; implemented comprehensive safety, health and environmental management system (**awarded ISO14001 and OHSAS18001 certification for Asia-Pacific exploration group**); **Exploration Division Management Committee** and industry member of Advisory Board to CODES.

VP EXPLORATION (AFRICA) (JOHANNESBURG, 2002-2003):

Designed exploration programme for non-sulphide zinc surrounding Skorpion Mine, Namibia; negotiated deal with Rosh Pinah, which culminated in the discovery of new oxide Zn deposit (18Mt @ 10%Zn); supervised exploration targeting Broken Hill-type Zn close to Black Mountain Mine, South Africa, and Ni in the Kunene and Tete large igneous complexes in Namibia and Mozambique, respectively; initiated in-house research programme to build upon results of the AMIRA-sponsored Copperbelt programme, which created clear competitive advantage for targeting; **Exploration Division Management Committee**.

CHIEF GEOLOGIST - TECHNICAL SERVICES (JOHANNESBURG, 2001):

Consulted to Prospecting Ventures in Zimbabwe, and managed evaluation of eluvial Cr along the Great Dyke; played key role in massive **organizational restructure of Anglo's Exploration Division in Africa** (initiated by McKinsey Management Consultants), which led to a staff reduction of about 200.

EXPLORATION MANAGER - ZAMBIA/DR CONGO (KITWE, 1998-2000):

Screened 50% of large tenement package (75,000 km²), targeting sediment-hosted Cu-Co, IOCG and shale-hosted Ni, resulting in several mineralized intercepts; organized major in-house Copperbelt Workshop (with ZCCM), championed the AMIRA P522 Copperbelt Project and sponsored a PhD study of Nchanga; **assisted in the development of the acquire data model**; supported Zambian Mines Dept to develop a mineral license management system.

EXPLORATION MANAGER - NE AFRICA (PRETORIA/NAIROBI, 1992-1998):

Completed regional targeting exercise of NE Africa for Au and base metals; **launched new Au project in the Western Lowlands of Eritrea** and "rediscovered" porphyry Cu mineralization in eastern Sudan; **established regional exploration office in Nairobi** to oversee exploration for Au and base metals in NE Africa; **championed the design/development of an integrated information management system** to improve the historical archives of African exploration data - since **used by Anglo to leverage into claw-back deals with junior companies**.

REMOTE SENSING GEOLOGIST (JOHANNESBURG, 1989-1992):

Processed and interpreted Landsat & SPOT imagery; PIMA orientation study of vegetation over Maun Cu mineralization, Botswana; **pioneered the routine use of GIS for mineral exploration in Anglo**; **taught MSc course in Remote Sensing & GIS** for three years at Rhodes University (1990-1992).

SENIOR/PROJECT GEOLOGIST (PIETERSBURG, 1983-1989 & BARBERTON, 1981-1983):

Managed successful drill-out of Archean Au deposit - subsequently exploited by Eersteling Gold Mine.
