

Curriculum Vitae

Maurice Boustead - Principal Engineer: Mining Infrastructure



- Profession:** ➤ Mechanical Engineers
- Education:** ➤ B.Sc. (Hons.) Mechanical Engineering (Sunderland Polytechnic).
➤ Mechanical Engineers Certificate of Competency (Mines and Works)
- Registrations / Affiliations**
- Registered Professional Engineer
- Southern African Institute of Mining and Metallurgy

Specialisation:

Mine infrastructure engineering design, particularly pumping, mining hydropower systems, backfill, refrigeration, dewatering, energy recovery, compressed air, mine transportation systems and other engineering services in mines. Project monitoring, preparation of feasibility studies, due diligence reports, accident and equipment/systems failure investigations.

Expertise:

Maurice has worked in the mining industry since graduating in 1981. His experience includes mine line management and operational experience on deep level gold mines (underground and surface) and consulting experience on large scale ore transportation systems. He was transferred, from the mines, to the Consulting Mechanical and Electrical Engineer's division at Gold Fields head office, where he exercised overall consulting responsibility for refrigeration, backfill and hydropower systems for various Group mines. Since joining the consulting engineering industry, he has applied his practical and design experience to projects within the mining industry.

Employment History:

Present	Associate Consultant Associate Consultant	Bara Consulting (UK) Royal HaskoningDHV
2004 - 2012	Associate Consultant	Turgis Consulting (Pty) Ltd
2003 - 2004	Consulting Engineer	Hatch (Africa)
1998 - 2003	Associate Consultant	Turgis Consulting (Pty) Ltd
1995 - 1998	Group Engineer	GfSA - Consulting Mechanical & Electrical Engineer's Division
1990 - 1995	Section Engineer	Gold Fields of South Africa
1987 - 1990	Mechanical Engineer (Design)	Thyssen GB Ltd
1985 - 1987	Applications Engineer	Ingersoll Rand
1982 - 1985	Certificated Engineer	Gold Fields of South Africa

Key Experience:

- IFC: Assessment for the recovery of a flooded mine (2014)
- AngloGold: Review of slurry backfill system (2014)
- Ferrexpo: Scoping study for Galeshina iron ore deposit – underground mine (2013/2014)
- Ferrexpo: Pre-feasibility study for Belanova iron ore deposit – open-pit mine (2013/2014)
- Ferrexpo: Evaluation of requirements for proposed conveyor system for Yeristovo open-pit (2013)
- Witwatersrand Gold: Underground and surface Infrastructure design and specification to level required for a bankable feasibility study for a proposed mine in South Africa (2013)
- Blackstone Group: Review of Iron Ore project (2013)
- ClearPhos: Pre-feasibility for open pit mine in Norway - Surface infrastructure and ore transportation (2013)
- Xstrata: Due diligence review of chrome and platinum operations in South Africa. Infrastructure evaluation including materials handling, mine dewatering and support infrastructure (2012)
- Northland Resources: Project monitoring of capital infrastructure during the construction phase of mine, plant and material handling logistics at an iron ore mine in Sweden (2012)
- AngloGold: Mine backfill system feasibility and detailed design (2012)
- Pan African Minerals: Pre-feasibility for manganese project in Burkina Faso.
- Avion Gold: Tabakoto Mine (Mali) water handing infrastructure (2011 – 2012)
- AngloGold: Mine backfill system review and feasibility – Moab Khotsong and Mponeng mines (2011)
- Axmin: Due diligence on gold project in Central African Republic – Capital expenditure (2011)
- J P Morgan: Due diligence of iron ore project – Sweden (2011)
- SouthGold: Burnstone water reticulation design (2009 – 2010)
- AnglGold: Mponeng underground water reticulation review (2010)

- SRK: Review of infrastructure and pre-feasibility for ore transportation system at a Bauxite mine in Guinea (2010)
- AngloGold: Design review of the installation of backfill for stope panel support (2009)
- Design of underground pumping station (2009)
- Uramin (AREVA): Mechanical detailed design for overland pumping system for the transfer of desalinated water from a desalination plant at the coast to a mining area inland in Namibia (2008)
- Harmony: PFS study for underground infrastructure for mine extension (2008)
- PFS study for underground cooling water and service water reticulation system (2008)
- PFS study for underground backfill storage and distribution system (2008)
- Design evaluation for compressed air reticulation system (2007)
- Goldfields: Design evaluation of hydropower system (2007)
- Design of energy recovery piping system (2007)
- Capital study for Yeristovskoe Open pit development in Ukraine (2007).
- Infrastructure review at Phalaborwa Mining company (2006).
- Feasibility design and costing for open pit and underground expansion project for Olympic Dam operations in Australia. Included materials handling system and mine dewatering (2004-2005).
- Peer review of horizontal and vertical transport systems at South Deep Mine (2006).
- Conveyors systems design for feasibility study at BHP Billiton Optimum Colliery expansion project.
- Moab Khotsong gold mine (AngloGold) 2004: Evaluation and design of an underground high pressure closed loop water reticulation system for mine cooling.
- De Beers Centenary Cut Project, 2003/4: Preparation of the underground water reticulation specification, layout and capital cost estimate for a bankable feasibility.
- Placer Dome Western Areas Joint Venture, 2004: Design of refrigeration plant piping system and review of shaft column designs for South Deeps.
- Mponeng gold mine (AngloGold), 2002 and 2003. Detailed design and engineering of a backfill reticulation system for stoping operations.
- BCL (Botswana), 2003: Design of bulk air spray cooler for underground mine cooling system.
- Boschfontein (Anglo American Platinum Corporation), 2003: Review of men and material handling systems for a decline shaft.
- Argyle Diamonds, 2002: Investigation into ventilation and cooling methods for expansion into underground development and mining.
- Kloof 7 Shaft (Gold Fields Ltd), 2002: Design of a new spillage handling system at shaft bottom
- Placer Dome Western Areas Joint Venture, 2001: Review of the installation integrity of shaft columns.
- KJB, 2002: Evaluation of the ore loading and rail transport facilities of a Jamaican Bauxite mine.
- Northam Platinum Ltd, 2001: Design of an additional shaft column to expand the existing hydropower system.
- Avgold Target Division, 2001: Investigation of material handling requirements for expansion into new mining areas.

- Kloof gold mine (Gold Fields Ltd), 2000: Investigation of a shaft column failures and detailed evaluation of failure mode.
- Kloof 4 Shaft (Gold Fields Ltd), 2000: Detailed design of a bulk air cooler to be installed underground as part of the mine cooling system.
- Beatrix gold mine (Gold Fields Ltd), 2000: Design of hydropower system including booster pump station, pressure regulating stations and piping.
- Deelkraal (AngloGold), 1999: Investigation of multiple shaft column failures and detailed evaluation of failure mode.
- Kloof (Gold Fields Ltd), 1999: Design of heat rejection system for an underground refrigeration plant
- Deepmine Research Programme, 1999: Recommendation for the suitability of existing rock handling systems for ultra-deep mines.
- Deepmine Research Programme, 1999: Review of practical energy recovery experience in industry
- Turffontein Platinum mine, 1998: Detailed design evaluation of closed loop chilled water cooling system.
- 1995 to 1998 Group Engineer responsible for mining infrastructure on the companies' mines. Design, planning and estimating of capital projects.
- 1990 to 1995 Section Engineer responsible of engineering operations at underground mining shafts and a gold extraction plant.
- Technical Sales Engineer responsible for development of wear resistant components using tungsten carbide and ceramics primarily for the oil and mining industries.
- Mechanical Engineer (Design). Project and design associated with tunnelling and shaft sinking operations. Maintenance and refurbishment of underground tunnelling equipment. Development and implementation of new mining equipment. Design and layouts for underground material handling systems.
- Applications Engineer. Development of a hydraulic rock drill using high-water based emulsion and water as the hydraulic medium. Rock drills used high pressure from hydraulic power packs. A water powered rock drill was developed from the emulsion drill to enable powering from a high pressure water system.
- Certificated Engineer/Post Graduate Engineer. Relieving Sectional Engineer at mine shaft. Relieving section foreman. Clerk of Work at shaft sinking project. General project work. Seconded to Gold Fields head office; Development of computer programme for the design of conveyor belts; preparation and adjudication of project tenders.