ROD CAMERON CONSULTING
Water Management - Mining - Environment

ROD CAMERON – Hydrogeology and Mine Water Management

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Professional summary

Rod Cameron is a UK-based independent hydrogeological consultant specialising in mine water management.

He has over 35 years of international consultancy experience, the last 30 of which have focused mainly on the mining sector, including:

- Dewatering
- Site-wide water balances
- Water management
- Environmental compliance

Rod is experienced in applying the above to PEAs, Scoping, Feasibility Studies, ESIAs and Due Diligence Studies. He is familiar with reporting standards such as NI43-101 and environmental guidance such as the Equator Principles and IFC Performance Guidelines.

In 1989 he was a founder director of Water Management Consultants (subsequently Schlumberger Water Services, now part of Piteau Associates), working on mine hydrology projects in a variety of locations including the UK, Ireland, USA, China, Chile and Peru. He later worked as a freelance consultant on mine and infrastructure water management projects in Zambia, Mauritania, Uzbekistan and Pakistan.

His work with Amec Foster Wheeler between 2005 and 2016 included projects in Asia (Russia, Kyrgyzstan, Azerbaijan, Turkey), eastern Europe (Romania, Bulgaria, Serbia), West Africa (Liberia, Sierra Leone, Cote d'Ivoire, Cameroon) and southern Africa (Zambia, Botswana, DRC and South Africa).

As Rod Cameron Consulting he has worked to date on projects in Kyrgyzstan, Spain, Bulgaria, Greenland, Saudi Arabia, Azerbaijan and the UK.

Rod's principal areas of expertise include:

Groundwater

- Groundwater supply
- Groundwater resources
- Water quality
- Modelling

Mine water management

- Dewatering
- Site-wide water balance
- Water use optimisation
- Management plans

Environment

- Meteorology
- Baseline studies and ESIA
- Discharge compliance
- Climate change

Professional qualifications/registration(s)

European Geologist (EurGeol)
Geological Society (London), Chartered Geologist and Fellow (CGeol, FGS)

Education

BSc (Hons) Geology, University of Liverpool, 1975

Languages

English (mother tongue)
Spanish (good)
French (working knowledge)
German (working knowledge)

Previous employment history

2005-2016	Amec (now Wood), Associate Director Hydrogeology
2000-2005	Freelance Consultant
1998-2000	Enviros Aspinwall, Principal Consultant
1997-1998	Freelance Consultant
1989-1997	Water Management Consultants (now part of Piteau Associates), Director
1980-1989	Aspinwall Hydrotechnical Services Ltd / Hydrotechnica, Senior Hydrogeologist
1978-1980	Thames Water Authority, Hydrogeologist
1976-1978	Severn Trent Water Authority, Groundwater Quality Assistant

Representative projects

Gold

- Bulgaria – Thrace Resources – feasibility study
- Azerbaijan – AzerGold – feasibility study
- Russia – Highland Gold – Baley Ore Cluster scoping study, water balance issues
- Kyrgyzstan – Chaarat Gold – scoping study and PFS reviews for proposed gold mine; ESIA
- Cote d'Ivoire – Amara Mining – PFS and ESIA for Yaouré project
- Serbia – Avala Resources – PEA for Timok prospect
- Liberia – Hummingbird Resources – baseline studies for proposed mine
- Serbia – Avala/Dunav Resources – technical support to client during IFC mission to evaluate investment opportunities in new gold projects
- Azerbaijan – AIMC – environmental assessment of existing heap leach and proposed extension of production at open pit gold mine
- Saudi Arabia – Ma'aden Gold – hydrological and hydrogeological components for prefeasibility and feasibility studies on several proposed open pit gold mines
- Sierra Leone – Cluff Resources – water management aspects of prefeasibility study and ESIA for development of Baomahun openpit gold mine
- Uzbekistan – Wardell Armstrong – hydrological component of EIA and dewatering requirements for Amantaytau gold mine development
- Peru – Wardell Armstrong – water balance and environmental assessment at Santa Rosa gold heap leach operation, Cajamarca province
- Bulgaria – Scott Wilson Mining – hydrological aspects of environmental impact assessments and water supply development for Krumovgrad (new) and Chelopech (existing) gold mining operations
- Romania – Gabriel Resources/Rosia Montana Gold Corp. – water component of EIA for proposed opencast gold mine in Transylvania, and subsequent public consultation process
- Peru – International Finance Corporation – evaluation and risk assessment of hydrological component of gold mining facilities of Minera Yanacocha
- USA – Amax Gold Inc. – Sleeper gold mine hydrogeological characterisation, dewatering design and modelling

Copper

- Zambia – KCM/Vedanta – Konkola site visit review of dewatering operations and water management
- Bulgaria – Assarel-Medet – review of dewatering for onward programming of open pit copper mine
- Democratic Republic of Congo – ENRC – dewatering and water management review, Frontier Mine
- Chile – Minera Escondida Ltda – Escondida copper mine water resources, wellfield development, aquifer modelling and environmental impact evaluations
- Chile – Compañía Minera Quebrada Blanca – copper mine well rehabilitation, groundwater resources and water supply permitting
- Peru – Southern Peru Copper – water resources evaluation, modelling, and water use audit for Cuajone and Toquepala copper mines
- Chile – Compañía Minera Doña Inés de Collahuasi – Collahuasi copper mine water resources and modelling
- Chile – Compañía Minera Zaldívar – copper mine groundwater resource development and aquifer modelling

Iron ore

- Cameroon – Caminex – PFS for iron ore project
- Liberia – Cavalla Resources/Jonah Capital – ESIA and water management for iron ore tailings reworking
- Liberia – Severstal – water aspects of environmental impact and prefeasibility studies for major proposed iron ore openpit mine
- Liberia – Arcelor Mittal – water management aspects of prefeasibility and feasibility studies for development of open pit iron ore mine, including groundwater modelling to predict likely dewatering/pit inflows and consideration of port groundwater requirements
- Ukraine – Arcelor Mittal – water management aspects of tailings management for existing open pit iron ore mine
- Mauritania – CMAL/Behre Dolbear – World Bank review of hydrological factors and constraints influencing inward investment to the mining sector, focusing on SNIM iron ore mine at Zouerate

Other commodities

- UK – Wolf Minerals – open pit dewatering, Drakelands tungsten mine
- Spain – Wardell Armstrong/Minera Los Frailes – water balance for restoration/mining of Cu-Zn-Pb project
- Greenland – Greenland Minerals & Energy – risk assessment (water) for proposed uranium and rare earth minerals project
- Serbia – Rio Tinto – Jadar lithium project groundwater model review
- South Africa – JOGMEC – Waterberg PGM project, due diligence of PFS reports
- South Africa – Vedanta – feasibility studies for expansion of Gamsberg zinc operation, Northern Cape
- Armenia – Dundee Precious – due diligence study of Kapan polymetallic mine
- Botswana – Lion Ore – due diligence study of Tati nickel mine
- Yemen – Scott Wilson Mining – groundwater characterisation and resources for proposed lead-zinc-silver mine, hydrological component of EIA
- Montenegro – CMAL/IPA Energy Consultants – hydrogeological review and river diversion feasibility update for open pit lignite mine
- UAE – WS Atkins – feasibility of sabkha magnesium brine project
- Chile – Minsal/SQM – Salar de Atacama brine wellfield design and construction management, brine abstraction performance and environmental impact
- Argentina – FMC/Minera Altiplano SA – Salar del Hombre Muerto brine reserve management
- China – British Mining Consultants Ltd – Linfen coal mine water supply investigation. World Bank project to confirm and evaluate water supplies from karstic limestone and other aquifers for newly developed coal mine and associated coking plant and power station

Non-mining

- UK – EDF – hydrogeological and dewatering aspects of EIA for nuclear energy facility including groundwater and contaminant transport modelling
- UK – National Grid – environmental and ground assessments for high pressure gas pipelines in north and south Humberside
- UK – Crest Nicholson/Norton Rose – expert witness in public inquiry under Part 2A contaminated land regulations in respect of contamination of Chalk groundwater in Hertfordshire by bromate and bromide. Included review of third party groundwater model
- Zambia – Scott Wilson Piésold – strategic EIA for development of Mpongwe karstic dolomite aquifer for irrigation as part of Kafue River basin study
- UK – Eton College – hydrogeological evaluation, modelling and management of Thames gravels extraction and construction of rowing lake facility (London 2012 Olympic venue)
- Peru – Machu Picchu Cable Car – hydrology component of environmental impact study of proposed cable car at Machu Picchu World Heritage Site
- Bahrain – McConnell-Dowell/GDC – geophysical logging and well testing for desalination plant feed. Major wellfield development in Umm Er Radhuma limestone aquifer for supply of new reverse osmosis plant

Publications and presentations

- "Water treatment and water management opportunities in mining". *British Water conference, London, April 2013*
- *With Diaz, M.* "Reduce, reuse, recycle." *Mining, People and the Environment, October 2010*
- "Discussion on implementation of the Water Framework Directive and related implications for the metalliferous mining industry." *International Mine Water Association conference, Karlovy Vary, June 2008*
- *In Luker, M. & Montague, K.* "Control of Pollution from Highway Drainage Discharges." *Thorburn Colquhoun for CIRIA Research Project RP473, 1994*
- *with Middlemis, H.* "Computer modelling of dewatering a major open pit mine: case study from Nevada, USA." In *Whateley, M.K.G. & Harvey, P.K. (eds.) Mineral Resource Evaluation II: Methods and Case Histories, Geological Society Special Publication No. 79, 207-217, 1992*
- *with Lucas, J.L.* "Groundwater quality in the Severn-Trent Region." *Wat. Pollut. Control, 80, 317-332, 1981*