

PAUL C. SATCHWELL

Consulting Mining Engineer

EDUCATION: BSc Mineral Exploitation (Mining Geology). University of Wales, UK.
197578.

MSc (Eng) Mining Engineering. Queen's University, Canada. 198485.

SUMMARY: **Thirty years international experience in technical project work, Project Management and Engineering Management at operating mines, engineering and consulting firms. Strong technical background in mine geology, ore reserves estimation, mine planning, equipment selection & fleet sizing, cost estimation, financial analysis, engineering and feasibility studies, life-of-mine and strategic planning, technical project management and project evaluation.**

EMPLOYMENT RECORD

2003- : Mining Technical Services International S.A. Consulting Mining Engineer, based in Santiago, Chile.

2001-2002: Manager of Engineering. Escondida Mine, II Region, Chile.

2000-2001: Manager, Technical Services. Escondida Mine, II Region, Chile.

1997-2000: Project Manager. BHP Minerals Technical Services. Santiago, Chile.

1994-1996: Senior Mining Engineer, Project Manager. BHP Minerals, Copper Division. San Francisco, CA, USA.

1992-1994: Mining Engineering Specialist. Bechtel Mining & Metals. San Francisco, CA. USA.

1990-1992: Mining Engineer, Senior Mining Engineer. Mineral Resource Development, Inc. (MRDI) San Mateo, CA, USA.

198890: Mine Geologist. Manville Sales Corporation. Diatomite Mine, Lompoc, CA USA.

198688: Mining & Computer Applications Engineer. Bauer, Calder & Workman, Inc. ND, USA.

198184: Mine Geologist, Resident Mine Geologist. Southern Peru Copper Corporation, Cuajone Mine, Peru.

197880: Mining Geologist. Roan Consolidated Mines Ltd. Luanshya, Zambia.

PROFESSIONAL AFFILIATION:Member, SME.

LANGUAGES: English (native). Spanish (fluent).

PERSONAL Age 52. Divorced. Three children.

DATA: USA, British passports.

Summary Resume

Paul Satchwell has international experience at mining operations in Zambia, Peru, the United States and Chile. He worked for a number of consulting firms during 1990-1994, including MRDI and Bechtel Mining & Metals, in the areas of resource estimation, mine planning, mine equipment selection and costing. At MRDI, Paul worked on diverse mining projects including Bema Gold Feasibility study (Chile), and numerous consulting assignments in Chile, Panama, Mexico and the United States. At Bechtel, Paul worked on the Collahuasi pre-feasibility study, and on the feasibility studies for Manto Verde, Mantos Blancos (Santa Barbara), and Radomiro Tomic in Chile. In addition to Latin American projects, he worked on Bechtel's pre-feasibility study of the Lumwana copper project in Zambia, on various diamond evaluations in Africa, and is currently working on a gold project in Ghana.

He has extensive experience with the use of the Whittle Four X pit optimization software, having used this on projects including Ekati diamond mine, Cerro Colorado and Spence copper mines in Chile, and La Granja property in Peru. He has reviewed mine planning practices at the Antamina mine in Peru, and was the BHP Billiton "owners' representative" during the preparation of the Spence Feasibility Study in 2003-4, and prepared the Spence Ore Reserves Declaration as Competent Person under the JORC guidelines in 2004.

In 1994 Paul joined BHP Minerals in San Francisco, and in total worked for BHP for almost nine years, first as a senior mining engineer working on project evaluations from the BHP San Francisco office, during which time he provided mining support to the Escondida Oxide project feasibility study. He was Study Manager for the Robinson expansion study, and worked on a number of evaluations for potential BHP acquisition, including the Michiquillay and Toro Mocho prospects in Peru, Agua Rica in Argentina, and various mines and prospects located in Chile.

In 1997 Paul moved to Chile to work as Study Manager on the Escondida Norte pre-feasibility study, working in conjunction with Fluor Daniel who provided the conceptual engineering for the project. The study addressed a variety of options for the project, including Concentrator, Heap Leach (using bio-leaching technology), and the associated infrastructure additions to link the project with the existing Escondida operation. During 1997 he also worked on the Pre-feasibility study for the Agua Rica project in Argentina.

Subsequently, for BHP in Chile, Paul was responsible for the mining sections of the Escondida Phase Four Feasibility Study, and in conjunction with planning engineers at Escondida produced

the first “life-of-mine” equipment, manning and operating cost estimate for the operation. In 2000 Paul joined the Escondida Engineering department as Superintendent of Technical Services, responsible for pit dewatering, slope stability and miscellaneous projects which included the development of a drainage tunnel, and a conditional simulation risk evaluation of the five-year mine plan.

During 2001-2002 Paul was Manager of Engineering at Escondida, responsible for Geology, Mine Planning, Slope Stability and Hydrology, Budgeting/Costing, and other mine technical areas. He managed Safety and personnel for 85 Escondida professional and technical staff, and over a 100 contract employees, the latter mostly involved with drilling and sampling programs. He was chairman and organizer of the Escondida Owners’ technical committee that met four times a year, with owners’ representatives of Rio Tinto, BHP Billiton and JRC, to discuss technical issues related to the mine.

After establishing himself as an independent consultant in 2003, Paul managed a Conceptual Study of the potential re-mining and processing of tailings at Escondida, in conjunction with Amec and a South African company expert in hydraulic mining. The study was completed according to the guidelines established by BHP Billiton for such a study, and Paul was responsible for the preparation of the study document and for financial modeling.

In September 2003 MTSI was asked to provide a review of the mine planning practices at the Antamina mine in Peru, which also included recommendations regarding the existing and potential future organization of the mine engineering department.

Also in 2003, Paul worked on a Materials Handling study for Escondida mine, and, together with Golder (Chile), participated in a review of the reconciliation practices at Escondida. Prior to commencement of the Escondida Ore Delivery Systems (ODS) project, which was contracted by Escondida to Hatch Engineers, Paul assisted with a number of infrastructure tradeoff studies associated with the project. These addressed areas such as the location of truck shops for the Escondida Norte mine, access roads, and other infrastructure common to the existing Escondida operations, the Escondida Norte project, and the Escondida Sulphide Leach project.

From September 2003 to June 2004, Paul worked on the Feasibility Study for BHP Billiton’s Spence project in northern Chile. He managed the mine planning work performed by NCL, a Chilean consulting firm, and was responsible for fleet sizing and selection, mine cost estimation, and completion of the mining section of the feasibility study document according to BHP Billiton guidelines. The work was audited externally and internally, and the Spence project was recommended for approval with no negative findings with respect to the mining areas. During the Feasibility Study, Paul Satchwell coordinated requests for quotations from mine equipment and explosives vendors, evaluation of these bids, and the interface between the mine area and the Basic Engineering performed by Aker Kvaerner.

In the period August 2004 to June 2005 Paul managed the Life-of-Mine (LOM) planning project for BHP Billiton Diamonds Inc at the Ekati mine in Northern Canada. A team consisting of seconded Ekati personnel, and some external consultants, was formed to perform this work. The scope was to provide a comprehensive, integrated mine plan that included several open pit and underground

mines, to provide the basis for business planning, strategic planning, and the backup required for the approval of future capital projects and mine development at Ekati. The work was performed according to the BHP Billiton guidelines for a LOM Plan, and the deliverables included the FY06 Budget mine plan, FY06-FY10 Five Year Plan, LOM plan, and documentation, tools and templates suitable for subsequent planning activities.

In June-July 2005 MTSI performed a review of the mine operating costs at the Escondida Norte mine, and made a series of recommendations regarding the re-assignment of costs between the two operating mines at Escondida (Escondida and Escondida Norte pits) which shared common fleet and maintenance facilities.

In August 2005 MTSI performed follow-up work at Ekati Diamond mine. Initially this consisted of a detailed review of the cost structure at the operation, and resulted in the recommendation of several significant cost-cutting measures. Due to the difficulty that Ekati mine experienced in recruiting permanent staff for its Long Term planning group, Paul Satchwell continued to support the planning work at the operation, and worked on the Resource Development Plan (RDP) and Life of Plan (LOM) Plan in the period October 2005 to May 2006. During this time he also provided the mining support for the Ekati Plant Expansion Pre-feasibility study, which involved the evaluation of several alternate new ore sources and mine plans. One of the deliverables of the work performed in this period was a Financial Model for the rapid evaluation of alternate mine plans. During the 2005-2006 period the technology transfer from MTSI to Ekati planning staff for the EDP and LOM planning components was completed.

In June 2006 MTSI was asked to prepare a Conceptual Study of potential expansion options for the Cerro Colorado copper mine operated by BHP Billiton in northern Chile. The Concept study required the evaluation of several expansion alternatives for the existing (bio-leaching) heap leach technology, plus potential new leaching options including Dump Leaching and chloride leaching. Paul Satchwell performed mine scheduling and option evaluation using the COMET program, and also provided after-tax cash flow DCF analysis to assist with the selection of the preferred options. He prepared the Concept Study report according to BHP Billiton corporate guidelines.

In September 2006 MTSI prepared a Request for Proposal for the Engineering work to support a Pre-feasibility study of Cerro Colorado expansion options. In the period October 2006 to March 2007 he worked as Study Manager, representing Cerro Colorado during the pre-feasibility study level engineering work being performed by Amec Chile, Vector Chile and Hatch Engineers. In May 2007 he completes several chapters of the Pre-feasibility Study report, including those on Strategy, Engineering Development, Capital Cost and the Project Execution Plan.

In April 2007 MTSI was awarded another contract with BHP Billiton's Ekati diamond mine in Canada. This is to provide ongoing technical support and assistance to Ekati's Strategy and Development group in the preparation of pre-feasibility studies for two potential new open pit diamond mines. This work was concluded in April 2008. He also assisted Ekati with their Resource Development Plan (RDP) in 2007, using the COMET optimizing scheduler program developed and marketed by Strategy Optimization Systems (STOPS) Pty from Australia.

Paul provided consulting work in 2007-2008 to a confidential client in Africa, on long term and strategic planning for a company with several large mines, and a number of important development projects that required evaluation and ranking.

During March-June 2008 MTSI provided support to Fluor Chile on mining aspects of the Conceptual Study for Rio Tinto's La Granja project in Peru. This consisted primarily of the coordination of technical work being provided by Metalica Consultores, a Chilean mining consulting firm, in the areas of mine equipment fleet estimation, pit optimization and NPV-optimized mine scheduling.

Paul Satchwell has recently completed a year-long assignment with Minera Spence, BHP's most recent copper leaching operation in Chile, working on a Conceptual Study to examine the potential of the primary (hypogene) resource at that property. Work included cost analyses, pit optimization, mine scheduling and economic analysis of project options. Paul was also co-editor of the Study Report, and the project was recently approved for advancement to the next stage.

MTSI is currently on assignment with Newmont Mining Company, where Paul will be working as Study Director for a potential gold project in Ghana.