Wealth Creation in the Minerals Industry:
Integrating Science, Business, and Education
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WEALTH CREATION IN THE MINERALS INDUSTRY:
INTegrating SCIENCE, BUSINESS, AND EDUCATION

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Preface

This Special Publication emphasizes the change over the past 25 years in the business of creating wealth through the discovery, development, and production of mineral deposits. The change has been considerable and permeates all stages of the process in areas that include the following: new governmental legislation and societal attitudes toward environmental and social aspects of exploration and mining; geopolitical factors affecting the location of investment, demand for mineral commodities, and risk levels; evolving technologies guiding the way we explore for, mine, and process deposits; the effects of scale changes on the size of mining operations and mining companies; and the people who explore for and develop the mines, including their education and training. The necessity of considering such a broad field represents a departure from the Society of Economic Geologists’ tradition of publishing primarily scientific literature; this volume focuses on integrating the business of exploration and mining with the science of the minerals industry, and the education and training that underpins all we do.

The editors of this Special Publication had two goals in mind as the process of soliciting and reviewing papers unfolded over the past two-and-a-half years. The first was to provide a volume of overview papers that would serve as a synthesis of important topics in the broad area of wealth creation from mineral deposits. Here, the objective was to trace the evolution of ideas and experience during the past 25 years in order to highlight where research and opinion currently stand. This compilation of papers will serve as a useful reference to professionals from industry and government as well as academics and students. The second goal of this volume was to provide an introduction to the broad range of topics outside the usual scope of the science of economic geology. Economic geologists are aware that their scientific endeavors fall within the context of the business of exploration and mining and it is precisely these topics that are becoming an increasingly important part of their job.

The papers presented in this volume were selected on the basis of their relevance and applicability to geologists involved in the search for, and development of, economic mineral deposits. Papers also were chosen because they provide case studies of such deposits.

This volume covers a wide range of topics, but papers generally fall into one of three broad categories: (1) summaries of mineral industry trends over the past approximately 25 years, including production, costs, technology, and case studies; (2) the role of exploration in the business of creating wealth, including measuring returns to exploration, assessing exploration tools and techniques, and case studies; and (3) issues of sustainability in the minerals industry, covering environmental, community, and social aspects of sharing the wealth, and the human resources and skills required to meet the future demand for mineral commodities. The editors have inserted cross references to other papers in the volume where appropriate, as many of the papers deal with topics that are linked to one another.

We thank Sam Adams and the SEG Publications Board for their foresight and support of this nontraditional Special Publication, as well as the Economic Geology 100th Anniversary Publications Committee for its critical input in the early development of the theme. We also thank the Organizing Committee, chaired by John Dow, for the SEG 2006 Conference, Wealth Creation in the Minerals Industry—Integrating Science, Business, and Education, being held at Keystone, Colorado, May 14–16, 2006. The conference and this volume have the same theme and, in fact, several papers from the volume will be presented at the conference.

In particular, we acknowledge the role of John F.H. Thompson, as both a liaison and a sounding board. The assistance of Jeffrey W. Hedenquist in the final stages of editing to meet publication deadlines was invaluable. Reviewers of the papers, listed below, helped to maintain the quality expected of the Society of Economic Geologists, and we thank them for their timely efforts. We acknowledge Alice Bouley, managing editor of SEG publications, in Littleton, Colorado, and her collaborators for copyediting and production of the volume, and Bernadette Lancaster, editorial assistant, Economic Geology, in Ottawa, Canada, for her assistance. Finally, we thank all the authors for providing papers that we believe will be important to the business and science of economic geology for many years to come.

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