BOOK REVIEW

HANDBOOK ON SAMPLING OF ORES AND MINERALS by S.C. Ghoshal,
Published by Dattsons, J.N. Marg, Sadar, Nagpur – 440 001, 2014, 154p. Rs.595

Sampling is a challenge in the mineral industry, since the sample should be a close or true representative of the whole. As ores and minerals can be of diverse origin and character (igneous, metamorphic and sedimentary) sampling poses numerous challenges. The author with his vast experience in handling such matters from IBM has dealt the subject matter in lucid and clear terms in three parts. Part I, containing 11 chapters (page 3 to 66) deals with sampling of ores and minerals. In this part, chapter I introduces the basic principles and objective of sampling starting from the exploration stage to mining stage with run-off mine ore (ROM). Sampling techniques, spacing and density of sampling that are needed in commercial operations are also described. Chapter II describes the mode of sample collection, optimum quantity of sample needed depending upon the grain size of ore or rock besides procedures for size reduction. Chapter III is entirely devoted to the different types of sampling during the different stages of exploration and mining including bulk sampling. Sampling of rejects from Fe and Mn ores besides limestone and clay mines are also provided. Chapter IV deals with the methodology of sampling during exploration especially the exploratory coring and non-coring drilling. Collection of bulk samples, often required for pilot plant operations are described in chapter V. Sampling of coal (chapter VI), placer deposits (chapter VII) and granite (chapter VIII) are also described. Application of statistical methods in sampling are given in chapter IX whereas chapter X deals with both random and systematic errors that are encountered during sampling operations. Chapter XI deals with the standardisation of sampling methods for different ores such as iron, manganese,

bauxite, chrome ore, limestone and dolomite as practiced at IBM, India

Part II in three chapters (page 67 to 104) deals with collection of bulk samples with case studies from different ore deposits. Chapter I in this section deals with sampling of deposits such as the Burgubanda graphite-tungsten in Andhra Pradesh and Jabua phosphorites from Madhya Pradesh. Chapter II covers mineralised dumps with flow sheets (e.g., Degana tungsten mine in Nagaur, Rajasthan) besides chromite dumps from Orissa, fines and floats from a reject dump from a heavy media separation plant in a magnesite mine in Tamil Nadu, manganese ore fines from Central India and nickeliferous dumps in chromite ores from Sukinda, Orissa and from a slime discharge point in an iron ore mine in Orissa. Part III in 5 chapters (page 105 to 154) deals with specification of ores and minerals for different industries (chapter I), symbols, notations and colour scheme in geological maps (chapter II), significance of computerisation in evaluating geological data (chapter III), important constituents of some ores and minerals that need to be analysed (chapter IV) and some properties of 49 selected ores and minerals (chapter V). A two page index makes it easier to access the subject matter.

This book, as outlined above, provides a compact and yet comprehensive account of sampling ores and minerals for industrial purposes and thus would be useful to economic geologists engaged in resource identification, proving and mining of different ores and also for post-graduate students seeking a career in mineral industry.

Bengaluru
E: gsocind@gmail.com

P. KRISHNAMURTHY
R.H. SAWKAR