# TABLE OF CONTENTS

## SESSION 1 – Geology of IMs in Colorado and other Western States

### Industrial Minerals, a Staple in the Economy of New Mexico
- P. Harben, G. Austin, G. Hoffman, V. McLemore, M. Caledon, J. Barker
- Page 1

### Montana's Industrial Minerals
- R.B. Berg
- Page 14

### Industrial Mineral Deposits of Colorado
- J.A. Cappa, B.L. Widmann
- Page 17

### Geology and Industrial Minerals of Oklahoma
- S.T. Krukowski
- Page 19

### Utah Industrial Rocks and Minerals – Geology, Mining, and Recent Developments
- B.T. Tripp
- Page 20

## SESSION 2 – Industrial Minerals, Then, Now and in the Future

### A Short History on the Exploration for and Production of Chlorite in the Western United States
- D.L. Crouse
- Page 24

### A History of Stone Resources in Canada as a Primer for Stone and Aggregate Resource Planning in Alberta
- W.A.D. Edwards
- Page 25

### Industrial Minerals: Almost a Generation of Change
- P. Harben
- Page 27

### Environmental and Economic Factors Influencing Use of Mineral Admixtures in Concrete Over the Last 25 Years
- G. Hoffman
- Page 28

### Next Generation Aggregates
- K. Jeffrey
- Page 31

### One Hundred Years of Industrial Mineral Production in 17 Western States
- W.H. Langer, A.B. Wilson
- Page 31

## SESSION 3 – Aggregates and other Construction Materials

### The Economic Geology of the Ovruch Quartzite and Sandstone Deposits Northern Ukraine – Transition from Soviet Controlled Operations to Free Market Enterprises
- J. Guilinger
- Page 34

### How Geology and Gravel Composition Affect Aggregate Quality in the South Platte River and its Tributaries, Colorado
- Page 35

### Cement Plants: A Great Opportunity to Teach People about Minerals
- D.O. Shumway
- Page 36
SESSION 4 – The Other Side of the Industry

Industrial Minerals Reserves and Resources Classification and Evaluation ......................................... 416
    D.M. Abbott Jr.

Construction Aggregates Verses The “Real” Mining Industry ................................................................. 443
    D.P. Bryan

Preventing the Sterilisation of Mineral Resources – Policy, Procedures and Reality in the UK .............. 451
    J. Cowley

Field Demonstrations of Five Geophysical Methods that Could be Used to Characterize Alluvial Aggregate Deposits ......................................................................................... 462
    K.J. Ellefsen, B.L. Burton, J.E. Lucius, S.S. Haines, D.V. Fitterman, J.A. Witty, D. Carlson,
    B. Milburn, W.H. Langer

Three Decades of Mined Land Reclamation ............................................................................................ 476
    K.S. Klco

Volumetric Analysis & Three-Dimensional Visualization of Industrial Mineral Deposits ................................ 487
    J.P. Reed

How Can There be Renewable Industrial Mineral Resources? ............................................................... 509
    N.R. Shaffer

SESSION 5 – Potpourri

Coal Combustion Products as Recovered Industrial Mineral Resources .............................................. 533
    D.C. Goss

Diamond Deposits of the North American Craton .................................................................................... 541
    W.D. Hausel

Gemstones of Wyoming – Recent Discoveries .......................................................................................... 587
    W.D. Hausel

A New Kaolin Province in Guyana and Suriname ..................................................................................... 604
    H.H. Murray

Chemistry and Mineralogy of the Turquoise Group of Semi-Precious Gem Stones and Their Facsimiles ................................................................. 610
    A.J. Regis

Poster Abstracts ........................................................................................................................................ 625

Field Trips and Guest Trips ...................................................................................................................... 635

List of Participants .................................................................................................................................... 640

Author Index