OCTOBER 1985

266 Panorama
Selby Mine North Drift conveyor handed over to N.C.B.; Massive new openpit coal mine in China moves towards production; Further moves towards development of Mt Emmons Mo deposit, U.S.A.; Polish coal mining—different role, different plans.

277 World Highlights

282 Coal

283 Iron ore

288 Lead-Zinc, Tungsten

291 Magnesite, Talc

293 Other mineral production

294 Exploration projects

295 Consultants, Engineers, Manufacturers

304 Hoists and Winches
Ranging from small, manually operated hoists to large rope haulage engines.

313 Gold in Brazil
From Gencor to garimpeiros—a summary of developments in gold mining activities of all sizes in Brazil.

329 Product and Process Update
New continuous miner from Canada; FLP all-steel conveyor belt vulcanizer; Oversize breaker at Australian iron ore mine; Low cost flue gas desulphurization; Drilling consumables in Canada, etc.

NOVEMBER 1985

349 Panorama
Progress at Mae Moh lignite mine, Thailand; Lignite of future importance in Northern Ireland; New silver mine in Ecuador; Ouesta's reclamation programme; Research on volcanic processes.

FOCUS ON AUSTRALIA

359 Mineral Resources
Since the 1960s, the mining and metal processing industries have grown at twice the rate of the national economy.

366 Mining Companies
Recent results of a number of major mining companies are reviewed.

378 Paddington
Pancontinental's new gold mining operation just north of Kalgoorlie poured its first gold in July this year.

387 Harbour Lights
The largest of the modern openpit gold operations at Leonara, W.A.

392 Ranger Uranium
Currently Australia's only uranium mining operation, Ranger carefully protects the environment.

406 Argyle Diamonds
The new 3 Mt/y pipe mining operation, which should produce 25 Mt/y of diamonds is scheduled to start up next month.

421 Mt. Isa and the Hilton Project
New developments at an established mine, and a new mine to augment reserves.
434 Manufacturers
A wide range of equipment for mining and minerals processing is available from Australian manufacturers.

443 Australian Coal
Australia leads the league of coal exporting countries.

462 Product and Process Update
Versatile new cutter-loader for mine development; High capacity solid-liquid separation etc.

DECEMBER 1985

482 Panorama
Opencast coal mining at Ugljevik, Yugoslavia; Carlin Gold Mining Ltd’s Gold Quarry mine is dedicated; Underground LPG storage scheme at Killingholme, U.K.; Large Scale Underground Mining Symposium, Lulea, Sweden.

488 World Highlights
491 All-Electric Trucks
A new electric truck developed in Sweden is expected to have a considerable impact on underground mine transport systems.

499 Hydraulic Hammers
Impact rock breaking hammers are a useful alternative to secondary blasting or drop ball methods. The various types are reviewed.

531 Altenberg
Recovering tin from cassiterite in the flotation plant at this famous mine in the German Democratic Republic.

512 Hunter Valley No 1
Effective use of computers aids production planning and quality control at Coal & Allied’s 5.0 Mt/y open cut coal mine in New South Wales.

524 Coaltech’85

526 Pressure filtration
Eight years of research and development have led to the first commercial installation of a new method of continuous pressure filtration.

538 Product and Process Update
Japanese loading shovels impress at U.S. mine sites; U.K. roadheaders for Canadian coal mines; New survey technique for coal deposits; Special roofing materials at U.K. mine; etc.

Mining Engineering

OCTOBER 1985

1197 Tenneco’s Green River project; Foresight and patience pay off
David R. Delling

1200 FMC’s Westvaco soda ash operation uses a variety of mining techniques
Lawrence Neal Post

1204 Overview of the geology and production of Wyoming trona
Ray E. Harris

1209 US soda ash industry — the next decade
Dennis S. Kostick

1225 Effect of cementation process on spent shale stabilization
D. Marcus, D.A. Sangrey, and S.A. Miller

1233 Empirical relationship for trona mine design
W. G. Fischer

1238 Technical note: Sizing bulk handling equipment for maximum output
L. Adler and G.T. Lineberry
Industrial Minerals

NOVEMBER 1985

1281 Legendary Saint Barbara still honored as the patron saint of mining
Pan Eimon

1284 Financial survival of the mining executive in a cyclical industry
Peter J. Szabo

1287 Update on industrial minerals uses in the drilling industry
William J. Miles and Raymond E. Blair

1289 Conda Partnerships’ Dry Valley phosphate mining project: A case study
Mark A. Krall, James C. Frost, and Robert L. Geddes

1293 Selective mining and good grade control are key to Carlin Gold’s success
Gerald C. Smith

1301 Tucker Hill perlite deposit, Lake County, Oregon
J. L. Wilson and D.L. Emmons

1308 Design of permanent block stopping to resist strata convergence
R.E. Ray, Jr., J.W. Stevenson, J.A. Berry, and R.J. Timko

1312 Selective flocculation for the recovery of iron in Kudremukh tailings
K.Hanumantha Rao, A. Nayak, S.N. Mahapatra, and K.S. Narasimhan

1316 Discussion: Interactive graphics for semivariogram modeling
J.M. Rendu

DECEMBER 1985

1355 Asama’s Cannon mine is largest North American underground gold mine to become operational this year
Tim O’Neil

1359 1985 SME Fall Meeting: US mining is beginning to feel good about its industry again
Steve Krai and Rock Jenkins

1364 AMC meets: Amid the presentations, question remains — how soon the recovery for mining?
Tim O’Neil

1367 Colorado School of Mines’ field institute increases public understanding of mining
Gary L. Baughman and Patricia C. Petty

1375 Methane drainage with cross-measure boreholes on a retreat longwall face
P.O. Thakur, S.D. Lauer, and J. Cervik

1381 Commercialization of eastern US oil shales—a review
V. Rajaram

1385 Development of crushed pellets at Kakogawa Works
K. Taguchi, T. Uenaka, S. Inaba, H. Isako, I. Mizuguchi, and K. Umeji

OCTOBER 1985

23 Spain’s industrial minerals

65 Limestone specifications — limiting constraints on the market

93 The manufacturing of burnt chamotte

101 US Cement: Record imports and reaction

NOVEMBER 1985

21 Celestite: new production and processing developments

37 North American fluorspar

57 North American pyrophyllite leading the way
61 Open Forum on industrial minerals — Making the Grade

67 Production of white carbonate paper fillers by a new ultra-fine wet grinding technology

71 Refractories in the glass industry — 28th International Colloquium on Refractories

DECEMBER 1985

15 The industrial minerals of West Germany

49 Minerals for paint

77 Kemira mica — utilising resources

Institution of Mining and Metallurgy

SEPTEMBER 1985

C105 Statistical approach to the precipitation of iron as 'goethite'
S. Agatzini and A.R. Burkin

C115 Kinetic model for hydrochloric acid leaching of kaolinite
S.Y. Gajam and S.Raghavan

C121 Fluidized-bed electrowinning of zinc from impure, weakly acidic sulphate solutions
M. Dubrovsky and J.W. Evans

C125 Model investigation of static flotation
R. Varbanov et al.

C129 Model describing mechanism of the flotation process
M. Szatkowski and W.L. Freyberger

C136 Catalysis of direct reduction of lead sulphide with carbon and lime
Y.K. Rao and S.K. El-Rahaiby

C140 Hydrogen reduction of Cu₂S in the presence of lime
S. Wonand H.Y. Sohn

C146 Evaluation of vacuum induction melting for copper refining
E. Ozberk and R.J.L. Guthrie

C158 Magnetic hydrocyclone separator
A.G. Fricker

Discussion

C164 Recent Chinese developments in mineral processing and extractive metallurgy: report of contributions at March, 1985, ordinary general meeting

C169 Catalysis of direct reduction of lead sulphide with carbon and lime
Y.K. Rao and S.K. El-Rahaiby

OCTOBER 1985

A181 Improvements in drilling and blasting practice at Utah development Company’s Blackwater mine, Queensland, Australia
A. J. Price and S.D. Thompson

A189 Geothermal preheating of mine intake air
Wang Ying Min and Chu Yi

A195 Introduction of management objectives at Orapa and Letlhakane diamond mines, Botswana: the transition from project to operation
H. E. K. Allen

A204 Cutoff grades — some further reflections
H. K. Taylor

Technical notes

A217 Optimization of design of large refrigeration systems for deep mines
Yu. A. Tseitlin et al.

A218 Ventilation of high sub-level caving stopes
Zhang Zongrong and Yang Huei-qin

A223 Choosing a modern hydraulic drill rig for underground mining and tunnelling
Barbara Stack
NOVEMBER 1985

B155 Interpretation through factor analysis of stream-sediment reconnaissance data for gold exploration in Ilesha greenstone belt, southwest Nigeria
A. A. Elueze and M. A. Olade

B161 Mineralogy of ironstone from Agbaja deposit, Nigeria, in relation to beneficiation
G. G. O. O. Uwadiaye and A. J. Hall

B166 Geostatistical modelling and geological controls
J. - M. Rendu

B173 Ore-reserve estimation using geologically controlled geostatistics
J. Benest and P. E. Winter

B181 Gas geochemistry as an aid to detection of buried mineral deposits
T. K. Ball, R. A. Nicholson and D. Peachey

B189 The cost in cash and control of raising money on oilfields: report of March, 1985, MM meeting

Technical notes

B197 Radioactive mineralization in Timna Valley, southern Israel
A. Ayalon, M. Beyth and U. Vulkan

B201 Discussion on use of carbon dioxide and oxygen in soil gases to detect hidden ore-bodies
D. Peachey, R. A. Nicholson and T. K. Ball

DECEMBER 1985

C1 71 The role of interfaces in pyrometallurgical processes
J. F. Elliott

C179 Ion flotation of uranium contained in industrial phosphoric acid with collector recycling
Jb. Jdid, P. Blazy and J. Bessiere

C184 Selection of autoclaves in hydrometallurgical operations
K. M. Sarkar

C195 Industrial sulphonates and barite flotation
R. Houot et al.

C201 On-line viscometer for mineral slurries
T. J. Reeves

C209 Reconciliation of simple node excess data
B. A. Wills and R. J. Manser

C215 Limitations in gaseous reduction, oxidation and upgrading of Allard Lake ilmenite
M. C. L. Patterson and J. Cameron

Technical notes

C224 Assessment of particle compositions by automatic linear analysis
M. P. Jones

C230 Mixing characteristics of RTL contactor
K. Poslu, A. W. L. Dudeney and R. J. Gochin

C232 Hydrometallurgy of lead
D. S. Flett

International Journal of Mineral Processing

OCTOBER 1985

155 A review of the literature on intermediate and fine particle gravity concentration
R. Sivamohan and E. Forsberg

157 Principles of sluicing
R. Sivamohan and E. Forsberg

173 Principles of spiral concentration
R. Sivamohan and E. Forsberg

183 Scale up of lifters in ball mills
D. W. Fuerstenau and A.-Z. M. Abouzeid
solution chemistry studies and flotation behavior of apatite, calcite and fluorite minerals with sodium oleate collector
R. Pugh and P. Stenius

Phosphate beneficiation by calcination. Prediction of $P_2O_5$ in the product, mining and plant control
D. Issahary and I. Petty

Technical Note
Statistical representation of generalized distribution data for float-sink coal-cleaning devices: Baum jigs, Batac jigs, Dyna-whirlpools
N.E. Fallon and B.S. Gottfried

Backmixing in industrial flotation banks.

CIM Bulletin

OCTOBER 1985

Grinding mills — installation and maintenance
J. George Gregr.

Manufacturing and refurbishing of jaw crushers
F. W. Greico and J.P. Greico

Performance of the Lomex 34-foot variable speed mill
J.G. Mieczaniec

Using hydraulic excavators to mine variably dipping coal seams
Ross G. Bertinshaw

Simulation of a dragline operation in an eastern Kentucky mine
S. Bandopadhyay and R. V. Ramani.

The history of gold discoveries in Canada — an unfinished story
Donald A. Cranstone

The New Pascalis gold discovery
Fernand Dubuc

Journal materials for a water lubricated bearing
J.C. Thornley and H.L.I. Drummond

Royalty arrangements in jeopardy
Robert B. Parsons

NOVEMBER 1985

Carrier flotation of hematite
Irene E. Cristoveanu and John A. Meech

The separation of chalcopyrite and pentlandite from Inco's Sudbury area ores — pilot plant testwork
W. B. Kipkie, G. E. Agar and R. A. Tenbergen

Circuit modification in Noranda's Geco Division concentrator
John F. Maissan

Gravity concentration — still alive and doing well
R. O. Burt, and C. Mills

The Baker Mill-start-up and early operation
W. W. Muir

Grinding simulation in Applesoft Basic (a synopsis)
R. del Villarand A.R. Laplante
Supercritical gas extraction of Hat Creek coal
M.M. Papic, B.C. Hydro, and J.C. Whitehead

Radium removal from Canadian uranium mining effluents by a radium-selective ion exchange complexer
L. A. Melis

DECEMBER 1985

Use of shaped charges in mining operations
E. Contestabile and T.R. Craig

In-situ stress determination at Ruttan Mine, Sherritt Gordon Mines Ltd.
R. Pakalnis, H. Miller, and T. Madill

AUGUST 1985

Analysis and prediction of geophone performance parameters
S. L. Huan and A. R. Pater

The elastodynamic field of N interacting vibrators (two-dimensional theory)
T. H. Tan

Computational and asymptotic aspects of velocity inversion
N. Bleistein, J. K. Cohen, and F.G. Hagin

Applications of elastic forward modelling to seismic interpretation
M. Reshef and D. Kostloff

Two-dimensional acoustic modeling by a hybrid method
V. Shitivelman

Shear-wave vibrator signals in transversely isotropic shale
S. Peacock and S. Crampin

Ridge regression applied to the inversion of two-dimensional aeromagnetic anomalies
L. W. B. Leite and J. W.D. Leao

A new approach to cemented backfill design
G. Swan

Coping with wall failures
F. J. Munn

Controlled blasting in hard intense jointed rock in tunnels
A. Rustan, T. Naarttijarvi

World potash — looking forward to the 1990s
Douglas A. Karvonen

A laboratory study of the flotation circuit at Bakertalc Inc., Highwater, Quebeec
P.R.A. Andrews

The Equity leach plant
C.R. Edwards

Approximate computation of radial gravity profiles for sources with circular symmetry
M.K. Paul

A theory of compressional wave attenuation in noncohesive sediments
C.McCann and D.M. McCann

Analysis of temperatures in sedimentary basins: The Michigan basin
M. A. Speece, T. D. Bowen, J. L. Folcik, and H. N. Pollack

Heat flow in the presence of topography: Numerical analysis of data ensembles
S.G. Henry and H.N. Pollack

Transient electromagnetic responses of a thin conducting plate embedded in conducting host rock
S.S. Rai

Crone pulse electromagnetic response of a conductive thin horizontal sheet—Theory and field application
S. S. Rai

A bias in amplitude measurements
J. A. Powell

On: "A sum autoregressive formula for the reflection response" (P. Hubral, S. Treitel, and P.R. Gutowski)
by W.K. McClary with reply by author

Geophysics
SEPTEMBER 1985

1399 Shear waves produced by explosive sources  
C.C. Lash

1410 Use of autoconvolution to suppress first-order, long-period multiples  
C.J. Tsai

1426 Plane-wave O-deconvolution  
S.H. Bickel and R.R. Natarajan

1440 Resolution in seismic trace inversion by parameter estimation  
P. van Riel and A. J. Berkhout

1456 Tracing of rays through heterogeneous media: An accurate and efficient procedure  
R.T. Langan, I. Lerche, and R.T. Cutler

1466 Transient analytic point-source response of a layered acoustic medium: Part I  
A. Tygel and P. Hubral

1478 Transient analytic point-source response of a layered acoustic medium: Part II  
M. Tygel and P. Hubral

1488 Interpretation of Crone pulse electromagnetic data  
D.C. Bartel and G.W. Hohmann

1500 An analysis of the spectrum of a gravity anomaly over an inclined dike  
B.N.P. Agarwal and D. Sito Ramaiah

1502 Computation of residual statics using projectors  
K. Caklovic and L. Caklovic

1505 Phase coherency filtering of reflection seismic data  
J.D. McGlynn and G.E. loup

1510 How to include prespecified horizons into minimum variance deconvolution and maximum likelihood deconvolution  
J.M. Mendel

1513 Asymptotic formula of the transform function for the layered earth and its applications to interpretation of resistive sounding data  
Z. Gai-shan

OCTOBER 1985

1525 A standard quantitative calibration procedure for marine seismic sources  
J.R. Friche, J.M. Davis, and D.H. Reed

1533 Deconvolution by autocepstral windowing  
T.E. Scheuer and D.E. Wagner

1541 A new solution method for the wave equation in inhomogeneous media,  
D.M. Pai

1548 Syntactic pattern recognition for the classification of Ricker wavelets  
K. Huang and K. Fu

1556 Seismic wave propagation in a porous medium  
V. de la Cruz and T.J.T. Spanos

1566 Applications of algebraic reconstruction techniques to crosshole seismic data  
J.E. Peterson, Jr., B.N.P. Paulsson, and T.V. McEvilly

1581 Solving cylindrical geothermal problems using the Gaver-Stehfest inverse Laplace transform  
H. Villinger

1588 Finite-difference synthetic acoustic logs  
R.A. Stephen, F. Pardo-Casas, and C.H. Cheng

1610 The magnetotelluric impedance tensor properties with respect to rotations  
S. Spitz

1618 The joint use of coincident loop transient electromagnetic and Schlumberger sounding to resolve layered structures  

1628 Apparent resistivity and diffusion velocity  
A.P. Raiche and R.G. Gallagher

1634 Optimization of one-way wave equations  
M.W. Lee and S.Y. Suh

1638 Scaling relations in surface polarization modeling  
L. Eskola

1640 Reply by author to Discussion on "Reflection and transmission of plane compressional waves" (R.D. Tooley, T.W. Spencer, and H.F. Sagori)
1093 Tutorial: Linear Inverse Filters in Orthogonal Coordinates
E.J. Douze

1103 A Numerical Study of Lamb’s Problem
M.J. Kuhn

1138 Wavefield Extrapolation Techniques for Inhomogeneous Media which include Critical Angle Events, Part I: Methods using the One-Way Wave Equations
O.P.A. Wapenaar and A.J. Berkhout

1160 Is it Possible to Increase the Resolution in Seismic Exploration for Coal by using High Frequency Signals?
H. Ritter and R. Schepers

1174 On Timing the VSP First Arrival
P.B. Dillon and V.A. Collyer

1195 Computer Representation of Complex 3-D Geological Structures using a New “Solid Modeling” Technique
H. Gjøystdal, J.E. Reinhardsen and K. Astebol

1212 First Arrival Picking on Common-Offset Trace Collections for Automatic Estimation of Static Corrections
F. Coppens

1232 The Application of VHF Measurements to Earthquake Prediction
R.P. Singh and D. Rankin

1240 Interpretation and Depth of Investigation of Gradient Measurements in Direct Current Geoelectrics
R. Schuh