Süreli Yayınlar 1981

CİM TECHNICAL PAPERS

Volume 74, Number 825 January 1981

Underground Mining

63 The evolution of cut-and-fill mining techniques at the Inco Limited Levack Area mines; D.M. May, Levack Mine, Inco Limited

75 Falconbridge introduces advanced technology to deep mining; K.H. Singh and L.H. Rafala, Falconbridge Nickel Mines Limited, Sudbury

84 High-speed tracked drifting and muckpans handling; Julian Baldry, Atlas Copco Canada Ltd., Montreal

82 Design techniques for sublevel caving layouts; D.A. Trotter, McGill University, Montreal; and G.J. Goddard, Montreal Engineering Company, Limited, Toronto

101 The evolution of mining methods at Brunswick Mining and Smelting; N. Dufresne, Brunswick Mining and Smelting; N. Dufresne, Brunswick Mining and Smelting Corporation Limited, Bathurst

110 The measurement of radon emanation rates in a Canadian cut-and-fill uranium mine; K.C. Cheng Elliot Lake Laboratory, CANMET, EMR; and J.W. M. Porritt, Bondar-Clegg, Ottawa

Coal

122 Coal gasification and liquefaction; T.D. Brown, CANMET, EMR, Ottawa

Tax Notes

134 October 28 federal budget's focus on energy—portent for mining?; R.D. Brown and R.B. Parsons, Price Waterhouse & Co., Toronto

Iron and Steel

149 Iron ore in the 80s; Noel G. Thomas, Dofasco Inc., Hamilton

Manpower and Training

119 Texasgulf's assessment centre—a six-year evaluation; John P. Pappone and Robert A. Macinnes, Texasgulf Canada Ltd.; and Peter Moon, Peter Moon and Associates, Toronto

Equipment and Maintenance

63 Introduction and use of fire-resistant fluids in underground mines in British
Columbia; T. G. Carter, Ministry of Energy, Mines and Petroleum Resources, Victoria, B.C.

69 (Synopsis); The selection and use of fire-resistant fluids for underground mining equipment; A.J. Harrison, Production Supply Company Ltd., Vancouver, B.C.

Coal Conversion

72 Coal liquefaction in Canada-the CANMET program; James F. Kelly, Synthetic Fuels Research Laboratory, CANMET, Ottawa

81 Coal conversion research; M.R du Plessis, Alberta Research Council, Edmonton, Alberta

Mine Geology

89 The structure of the Strathcona Mine copper zone; M.K. Abel, Falconbridge Nickel Mines Ltd., Falconbridge, Ontario

Mineral Processing

115 Feasibility of iron recovery from Mount Wright tailing material; John A. Meech, Queen's University, Kingston, Ontario

Volume 74, Number 827 March 1981

Coal


153 Dimits of upgrading Western Canadian coals high in sulphur by wasting (a synopsis); D. Abbott, New Brunswick Research and Productivity Council, Fredericton, N.B.

155 The Greenhills surface coal mining project; C.I.K. Britch, B.C. Coal Ltd. (formerly Kaiser Resources Ltd.). Sparwood, British Columbia

Mining Manpower

161 Assessing the payback in training; Larry Anderson, Currie Coopers & Lybrand Ltd., Management Consultants, Toronto, Ontario

Health and Safety

164 Identification and quantification of health and safety risks in mining; G. W. Gibbs, Celanese Canada Inc. and McGill University, Montreal, Quebec

Underground Mining

167 Hydraulic drilling at the TANCO mine; G.W.R. Kuzyk, Tantalum Mining Corporation of Canada Ltd., Bernfie Lake, Manitoba

Metallurgy

195 Simulation of the Bond grindability test; V.K. Karra, Rexnord Inc., Milwaukee, Wisconsin

200 The Highmont Concentrator; C.V. Sibbald, Teck Corporation Ltd., Vancouver, British Columbia

Tax Notes

180 OMEP—Ontario’s exploration incentive; R.D. Brown, Price Waterhouse & Co., Toronto, Ontario

Volume 74, Number 828 April 1981

Geology and Mineral Exploration

59 Exploration significance of the emplacement and genesis of massive sulphides In the Main Zone at the Norlto Mine, Matagami, Quebec; P.J. Mac Geehan, Western Mining Corporation Ltd., Australia, W.H. Mac Lean, McGill
University, Montreal, and A.J. Bonenfant, Noranda Mines Ltd., Matagami

76 A review of some useful algorithms in geophysics; D.C. Fraser, Dighem Limited, Toronto, Ontario

84 Geophysical logging for mineral exploration and development; R.D. Plouffe, Uranerz Exploration and Mining Limited, Saskatoon, Sask.

93 A comparison of uranium exploration methods at the South March uranium-copper occurrence; R.H. McCorkell, J.W.M. Porritt and M.P. Brameld, Bondar-Clegg and Company Ltd., Ottawa, Ontario

99 The probability of economic success in exploring for tin deposits; V. Rudenno, University of New South Wales

102 Target definition of Kuruko-type deposits in Abitibi by discriminant analysis of geochemical data; D. Marcotte and M. David, Ecole Polytechnique, Université de Montréal

109 The relevance of new terrain mapping to mineral exploration; J.F. Gartner, Gartner Lee Associates, Ltd., Toronto, Ontario

Coal Mining

114 Application of a cross-pit bridge conveyor system in mining; RW. Zeindler, Krupp Canada Inc., Calgary, and D.A. Fawcett, Coal Mining Research Centre, Edmonton, Alberta

Volume 74, Number 829 May 1981

Open-Pit Mining

65 The stability of open-cut slopes in Chazy limestone in a Montreal-area quarry; John E. Udd, Peter Leinberger and Roman Kozarycz, McGill University, Montreal, Quebec

Geochemical Exploration

73 Etude du drainage superficiel et souterrain de la mine de ciel ouvert des Mines Gaspé, Murdochville, Québec; A. Liard, G. Sauriol et H. Sommelet, Géomines Ltée, Montreal, Québec

81 Spherical charge cratering plane and angle geometry involving small-scale single and row tests; R.R. McLachlan, D.E. Salman and R.J. Barely, McGill University, Montreal, Quebec

86 Surface stabilization of tailing disposal areas at Wabush Mines; E.L. Horner, Wabush Mines, Wabush, Labrador

Synopsis (Metal Mining)

89 Coal mining at the Smoky River minesite, McIntyre Mines Limited; J.E. Carter and D.P. Watll, (at time of writing with) McIntyre Mines Limited, Grande Cache, Alberta

100 A regional stream sediment and heavy mineral concentrate survey, Churchill Falls, Labrador; John E. Callahan, Appalachian State University, Boone, North Carolina

Mineral Economics

115 Looking for the improbable needle in a haystack; the economics of base metal exploration in Canada; Brian W. Mackenzie, Centre for Resource Studies, Queen’s University, Kingston, Ontario

Synopsis (Coal)

127 Recovery of thermal coal from waste dumps near Stellarton, Nova Scotia; M.W. Minhai and L.C. Bird, CANMET,
Energy. Mines and Resources Canada, and N.T.L. Landgren, Nova Scotia Department of Mines

Tax Notes

132 Earned depletion and the mining Industry; Robert B. Parsons, Price Waterhouse & Co., Toronto, Ontario

Extractive Metallurgy

145 Oxidative pressure leading of zinc concentrates; E.G. Parker, Cominco Ltd., Trail, British Columbia

Volume 74, Number 830 June 1981

CIM Activities

17 Coal Division Newsletter
18 Geology Division Newsletter

Forum

20 Managing Canada’s resources—a government perspective; Hon. Judy Eroia, Minister of State—Mines, Ottawa

Personality Profile

28 A CIM interview with Noel Thomas, director of research, Dofasco inc.

News Briefs

45 New book examines polymeric materials used in mines, and their fire safety
45 Vancouver to host world chemical congress
45 University of Toronto holds 7th annual bre deposits workshop
51 12th underwater mining institute
54 Conference on the mechanical behaviour of salt
59 Conflicts in scientific information resolved by CINDAS of Purdue

78 New IMM volume on national & international management of mineral resources
78 MacEachen to address conference on offshore resources
78 Inter-American conference on materials technology stated for Mexico City
83 Tenth geochautauqua on computer applications in the earth sciences
83 International coal trade conference
121 Econocis of mined-land reclamation to be studied at Chicago conference
121 New publication guide from Aluminum Association
121 Research to be stressed at 22nd annual rock mechanics symposium

Discussion

84 John Dasher comments on “Feasibility of iron recovery from Mount Wright tailing Material”, by J.A. Meech

Education

89 Education Committee gets together at Annual General Meeting

Metallurgical Items

93 Program and abstracts of papers for 20th Annual Conference of Metallurgists
113 Historical Metallurgy; In search of history (2)—Henry Cort

Operating Techniques

126 Mechanical scaler being developed for underground mining
126 Regenerative motor speed control recovers 98 per cent of waste energy
127 h.o.p. ConsuLab Inc. presents EDU-ENERGY
127 New pollution measurement device tested
128 New concept in heating involves a run-around system for underground mines

Volume 74, Number 831 July 1981

Mineral Economics

59 Reserve / consumption ratios — How can they be interpreted?; F.-W. Wellmer. Federal Ministry of Economics, Federal Republic of Germany

Uranium Geology

63 Unconformity-related uranium deposits, Athabasca area, Saskatchewan, and East Alligator Rivers area Northern Territory, Australia; LA. Clark and G.H.R. Burrill, Saskatchewan Mining Development Corporation, Saskatoon

Geology and Exploration

73 Komatiites, "boninites" and tholeiitic picrites in the central La Ronge metavolcanic belt, Saskatchewan and Manitoba, and their possible economic significance; J.S. Fox, Saskatchewan Mining Development Corporation (now at Teck Explorations Limited), and W.G.Q. Johnston, Saskatchewan Dept. of Mineral Resources

83 Secondary alkali feldspars in porphyry systems; Craig H.B. Leitch, NQMONT Exploration of Canada Limited, Vancouver

Advances in Technology

Through Metallurgical Sciences

95 Foreword; C. George Miller, Centre for Resource Studies, Queen's University, Kingston

98 Continuous casting of steel; F. Weinberg, University British Columbia, Vancouver

100 Working within metallurgical limitations in the successful repair welding power-plant components; W.H.S. Lawson and D. Mills, Ontario Hydro, Research Division, Toronto

105 The pressure tubes in the CANDU power reactors; CE. Ellis and W. Evans, Atomic Energy of Canada Limited, Chalk River

110 Non-magnetic stainless steels for cryogenic engineering; H.W. King, Dalhousie University, Halifax

119 Texture strengthening in high-temperature applications such as heat-exchanger materials; S. Salmoto, L Collins and G.B. Hobbs, Queen's University, Kingston

Tax Notes

126 Structuring mineral resources ventures—a synopsis; Robert B. Parsons, Price Waterhouse & Co., Toronto

Volume 74, Number 832 August 1981

Energy Management

65 Energy conservation at Inco Metals Company; the Frood-Stoble mill heating and ventilating system; M. Taylor and C.R. Kerr, Ontario Division, Inco Metals Company

Coal Mine Development

68 Development of the Genesee power project; David C. Mulder, Edmonton Power

Industrial Minerals

73 Energy as a production input in the industrial minerals industry—past and future requirements; Barry James, Conservation and Renewable Energy Branch, EMR Canada, Ottawa

Underground Mining

80 Generation of sulphur dioxide in blasting at the Fox Mine; E.N. Du Russe I,
Sherritt Gordon Mines Limited, Lynn Lake, Manitoba

83 Monitoring of radiation variables in the underground environment; J. Bingu, Elliot Lake Laboratory. CANMET, Energy, Mines and Resources Canada

Mineral Economics

93 Columbium—an outlook; E.A. Manker, "Niobec in., Montreal

Rock Mechanics

100 17th supplement to bibliography of Canadian contributions in the field of rock mechanics; P.E. Wiedmark (CANMET), for the Canadian National Committee on Rock Mechanics

Metallurgy

123 Treatment of complex copper concentrates in the TBRC at Boliden; S. Peterson, S. Eriksson and C. Frtdefldt, Boliden Metal Aktiebolag, Sweden

128 Radium-226 removal by precipitation and sedimentation in setting ponds; D. Moffett and E. Barnes, Rio Algom Ltd., Elliot Lake, and J.N. Hilton, McLaren Engineering Planners and Scientists Inc., Willowdale, Ontario

Underground Mining

85 The compression-percolation test for mine tailings backfill; R.J. Mitchell and J.D. Smith, John D. Smith Engineering Associates Ltd., Kingston

Environmental Control

90 Laboratory apparatus for measuring radon emanation from solids; R.H. McCorkell, G. Archambault and M.P. Brameld, Bondar-Clegg and Company Ltd., Ottawa

97 A rapid method of radium-226 analysis in water samples using an alpha spectroscopic technique; T.P. Lim, CANMET. EMR, Elliot Lake, and N.K. Dave, Agnew Lake Mines Ltd., Espanola, Ontario

Discussion and Author’s Reply

106 Western Mines—Myra, Lynx and Price deposits; Discussion by W.A. Padgham; Author’s Reply by R.H. Seraoohim

Tax Notes

109 Provincial spring budgets, 1981 - 82; Robert D. Brown, Price Waterhouse & Co., Toronto

Mineral Processing

123 BILMAT: An algorithm for material balancing mineral processing circuits; D. Hodouin, T. Kasongo, E. Kouame and M.D. Everell, Université Laval, Québec

132 An evaluation of the recovery of free and unliberated mineral grains, metals and trace elements in the concentrator of Brunswick Mining and Smelting Corporation Ltd.; William Petruk, CANMET, Ottowa, and J.R. Schnarr, Brunswick Mining and Smelting Corporation Ltd., Bathurt
Search for Deeply Buried Mineral Deposits

55 Prospecting for deep volcanogenic ore; Julian Boldy, Placer Development Limited, Toronto, Ontario

Mine Development

66 Terrain and soil assessment in support of planning for metal mine development; D. Maynard and M. Walmsley, Pedology Consultants Ltd., Victoria, B.C.

Manpower

72 Functional training at Inco’s Thompson Mine; W.F. Scott and K.L. Somerville, Inco Metals Company, Thompson, Manitoba

Underground Mining

SO Description of pillar behaviour at Heath Steele Mines; Gerald A. Alcott and Donald E. Archibald, Heath Steele Mines Limited, Newcastle, N.B.

Efficient Equipment Practices

88 Major savings and production efficiencies with wear-resistant ceramics; P.A. Verhey, Williams & Wilson United Scarborough, Ontario

Hydrometallurgy

103 Treatment of cobalt arsenide feeds for the subsequent recovery of cobalt; G.M. Ritcey, EMR Canada, Ottawa, and A.W. Ashbrook, Eldorado Nuclear Limited, Ottawa

Underground Diesel Emissions

63 The emission control system on the Volvo BM 861 U underground truck; J.P. Mogan, K. Katsuyama and E.D. Dainty, CANMET, EMR, Ottawa, Ontario

68 Progress in the control of underground diesel emissions; A. Lawson, Ontario Research Foundation, Mississauga, Ontario

74 An underground mine air quality laboratory for studying ventilation, vehicle and diesel engine pollutant control techniques; D.E. Keski-Hynnia, E.O. Reinbold and J.H. Johnson, Michigan Technological University, Houghton, Michigan

84 Polynuclear aromatic hydrocarbons in the underground mine environment; A.J. Faulds, Z. Waszczylo and K.C. Westaway, Laurentian University, Sudbury, Ontario

Equipment and Maintenance

91 The impact on underground ventilation of the reduction of diesel emissions toxicity by water-in-oil fuel emulsification; E.D. Dainty and J.P. Mogan, CANMET, EMR, Ottawa, and A. Lawson, Ontario Research Foundation, Mississauga, Ontario

98 New trends in underground mine communications; Raymond Volge, Mine Safety Appliances Company, Pittsburgh, Pennsylvania

102 Truck dispatching and simulation methods in open-pit operations; P.K. Chatterjee, University of Queensland (now with Michigan Technological University), and D.J. Brake, Mount Isa Mines Limited, Mount Isa, Australia

108 Protective Instrumentation for large grinding mill trunnion bearings; R.L. Guerguerian and Eugene Bercel, Dominion Engineering Works Limited, Montreal Quebec

119 Pilot-plant data for the design of primary autogenous and semiautogenous mills; C.A. Rowland, Allis-Chalmers Corporation, Milwaukee, Wisconsin
Mineral Processing

43 Principal developments in the automatic control of mineral processing systems; A. Galip Ulsoy (now with University of Michigan, Ann Arbor, MI) and K.V.S. Sastry, University of California, Berkeley, California

Coal Processing

54 Contact-angle measurements on coal particles from solidification front experiments, E.J. Vargha-Butler, M.R. Soulard and A.W. Neumann, University of Toronto, Toronto, Ontario, and H. Hamza, CANMET, EMR, Edmonion, Liberia

Computer Applications

59 Status of computer applications for underground coal mining methods evaluation; B. Das, CANMET, EMR, Calgary, Alberta

Industrial Minerals

64 Recovery of apatite as a by-product from carbonatite-pyrochlore ore; Gennard Dellsle, Ministère de l’Energie et des Ressources du Québec

70 Pencil bit tooling for continuous miners in potash; Eric Best, Potash Corporation of Saskatchewan Mining Limited, Lanigan, Saskatchewan

Environmental Control

74 Establishing a vegetative cover on base metal tailings—experience at Buchans, Newfoundland; Paul J. O’Brien and George N. Neary, ASARCO Incorporated Buchans, Newfoundland

Geology

81 Chemistry and origin of carbonaterich rocks in the area of Amlsk Lake (East), Saskatchewan; G.R. Parslow, B.R. Waiters and F.H. McDougall (now with Saskatchewan Mining Development Corporation, Saskatchewan), University of Regina, Regina, Saskatchewan

Education

87 Mine plant engineering industry/education review; D.H. Wilson; Wire Rope Industries Ltd., Pointe Claire, Quebec

99 Nuclear energy: a credible energy source; J. Boulton, Whiteshell Nuclear Research Establishment, Pinawa, Manitoba

Discussion

96 Development of the Genesee power project, a discussion by Wm. C. Gussow; and reply by D.C. Mulder

Tax Notes

97 The energy game: first down and four to go; Robert B. Parsons, Price Waterhouse & Co., Toronto, Ontario

GEOPHYSICS


President’s Page: The new GEOPHYSICS size, Kevin M. Barry 1

Areal seismic methods for determining the extent of acoustic discontinuities, J. A. McDonald, G. H. F. Gardner, and J. S. Kotcher 2

Surface consistent corrections, M. T. Tanner and F. Koehler 17

Crosshole seismic testing — Procedures and pitfalls, D. K. Butler and J. R. Curro, Jr. 23

Analysis of multilsource gravity and magnetic anomaly data sets by moving-
window application of Polsson’s theorem, V. W. Chandler, J. S. Koskl, W. J. Hinze, and L W. Braile 30

Position measurements with the LaCoste and Romberg air/sea gravimeter, H. D. Valliant and R. V. Cooper 40

Electromagnetic response of an embedded cylinder for line current excitation, S. O. Ogunade 45

Coincident loop transient electromagnetic master curves for interpretation of two-layer earths, A. P. Raiche and B. R. Spies 53

A borehole induction procedure for investigating electrical conductivity structure within the broad vicinity of a hole, M. H. Worthington, A. Kuckes, and M. Orlstalgito 65

Induction logging for vertical structures in the presence of a borehole fluid, A. Q. Howard, Jr. 68

In-situ determination of heat flow in unconsolidated sediments, J. H. Sass, J. P. Kennelly, Jr., W. E. Wendt, T. H. Moses, Jr., and J. P. Ziagos 76

A composite model for the anisotropic elastic moduli of lean oil shale, J. B. Rundle and K. W. Schuler 163

Deepwater vibrator operations, Beauford Sea, Alaska, 1979 winter season, R. W. Mertz., L D. Brooks, and M. Lansley 172

Integral equation modeling of three-dimensional magnetotelluric response, S. C. Ting and G. W. Hohmann 182

Deconvolution of gamma-ray logs in the case of dipping radioactive zones, J. G. Conaway 198

An océanographie data recorder, R. E. Davis and B. P. Ambuter 203

Reexamination of the values used as constants in calculating rock density from borehole gravity data, S. L. Robbins 208

Application of Gauss’s method to magnetic anomalies of dipping dikes, I. J. Won 211

Vol. 46, No. 3, March 1981

President’s Page: Training. L. C. (Lee) Lawyer 237

The traveltime equation, tau-p mapping and inversion of common midpoint data, J. B. Diebold and P. L Stoffa 238

Direct mapping of seismic data to the domain of intercept time and ray parameter — A plane wave decomposition, P. L Stoffa, P. Buhl, J. B. Diebold. and F.Wenzel 255

An inverse method for computing geologic structures from seismic reflections — Zero-offset case, B. T. May and J. D. Covey 268

Ultrasonic velocities In Cretaceous shales from the WIHlston basin, L E. A. Jones and H. F. Wang 288

MADENCİLİK, MART - HAZİRAN 1981 61
Algebraic reconstruction of a two-dimensional velocity inhomogeneity in the High Hazles seam of Thoresby colliery, 1. M. Mason

Electromagnetic field of a dipole on a two-layer earth, W. C. Chew and J. A. Kong

The use of near-infrared spectroscopy to determine the degree of serpentinization of ultramafic rocks, G. R. Hunt and R. C. Evarts

Microwave properties of drilling fluids, J. N. Lange and S. S. Shope

Detectability of an intermediate layer of magnetotelluric sounding, R. Kumar, S. V. S. Sarma, and P. V. S. Narayan

DISCUSSIONS

On: «Long-wave elastic anisotropy in transversely isotropic media» (J. G. Berryman) and «Seismic velocities in transversely isotropic media» (F. K. Levin), by F. M. Lyakhovitskiy

On: «Gravity Interpretation with the aid of quadratic programming» (N. J. Fisher and L. E. Howard), by W. Anflloff

The Continuing Challenge and Opportunity for Exploration Geophysics, Milo M. Backus

Vol. 46, No.: 4, April 1981

Abstracts of Papers Presented at the 50th Annual Meeting In Houston 402

Vol. 46, No.: 5, May 1981

President’s Page: SEG’s Annual Meeting — Growth and Change, E. R. Brumbaugh 705

Time-depth and velocity-depth relations in sedimentary basins — A study based on current investigation in the Arctic Islands and an Interpretation of experience elsewhere, C. H. Acheson 707

Fundamentals of frequency domain migration, J. H. Chun and C. A. Jacewitz 717

Depth migration of imaged time sections, K. L. Larner, L. Hatton, B. S. Gibson, and I-C. Hsu 734

Migration of seismic data from inhomogeneous media, L. Hatton, K. L. Larner, and B. S. Gibson 751

Depth of investigation of collinear electrode arrays over homogeneous anisotropic half-space in direct current methods, B. B. Bhattacharya and M. K. Sen 768

A self-similar model for sedimentary rocks with application to the dielectric constant of fused glass beads, P. N. Sen, C. Scala, and M. H. Cohen 781

A hybrid three-dimensional electromagnetic modeling scheme, K. H. Lee, D. F. Pridmore, and H. F. Morrison 796

Vol. 46, No.: 6, June 1981

Editorial: Expanded abstracts required for 1982 convention 831

Direct reconstruction of velocity and density profiles from scattered field data, S. Raz. 832

Three-dimensional velocity profile inversion from finite-offset scattering data, S. Raz. 837

The theoretical seismic reflection response of sedimentary sequences, C. J. Velzeboer 843

Modeling of the acoustic wave equation with transform methods, J. Gazdag 854

Inversion of refraction data by wave field continuation, R. W. Clayton and G. A. McMechan 860

Analysis of dispersive waves by wave field transformation, G. A. McMechan and M.J. Yedlin 869

MADENCİUK, MART-HAZİRAN 1981
Linear prediction error filter design, S. T. Hildebrand 875

Synthetic vertical seismic profile, K. D. Wyatt 880

An examination of tube wave noise in vertical seismic profiling data, B. A. Hardage 892

The electromagnetic fields of a horizontal dipole over a vertically inhomogeneous and anisotropic earth, M. Chlamtac and F. Abramovici 904

Restrictions on the use of Cole-Cole dispersion models in complex resistivity interpretation, J. Major and J. Silic 916

The Cole-Cole model in time domain induced polarization, T. Lee 932

DISCUSSIONS

On: «A grounded vertical long-wire source system for plane-wave magnetotelluric analog modeling» (R. N. Edwards) by James R. Wait with reply by author 934

On: «SEG delegation visit to People's Republic of China» (SEG delegation members), by Chen Pan with reply by authors 937

Vol. 46, No. 7, July 1981

President's Page: The «Best Paper in GEOPHYSICS» Award, Pierre L. Goupillaud 971

Inversion of reflection times in three dimensions, H. Gj0ystdal and B. Ursin 972

On the resolution statics, structure, and residual normal moveout, M. O. Marcoux 984

Fault location by channel wave seismology in United Kingdom coal seams, D. J. Buchanan, R. Davis, P. J. Jackson, and P. M. Taylor 994

An indirect seismic method for determining the thickness of a low-velocity layer underlying a high-velocity layer, K. L. Kaila, H. C. Tewari, and V. G. Krishna 1003


Analysis of electrical conductivity Imaging, K. A. Dines and R. J. Lytle 1025

Transient electromagnetic response of a polarizable ground, T. Lee 1037

Elastic wave propagation in a fluid-filled borehole and synthetic acoustic logs, C. H. Cheng and M. N. Toksöz 1042

Improvement of the conic prism model for terrain correction in rugged topography, R. J. Olivier and R. G. Sjamaard 1054

Scale Invariance of the low-frequency electrical properties of inhomogeneous materials, M. H. Cohen 1057

DISCUSSION

On: «Variation of density with rock type, depth, and formation in the Western Canada basin from density logs» (J. Maxant) by A. R. Brown with reply by author 1060

Vol. 46, No. 8, August 1981


A method for calculating synthetic seismograms which include the effects of absorption and dispersion, D. C. Ganley 1100

Maximum entropy spectral decomposition of a seismogram into its minimum ent-
Density and compressibility profiles of a layered acoustic medium from precritical incidence data, S. Coen 1244
A new technique for layered earth magnetotelluric Inversion, J. C. Larsen 1247
Induced polarization in disseminated sulfide ores containing elongated mineralization, J. Wong and D. W. Strangway 1258
Multifrequency Turam measurements over a sulfide deposit, M. Poddar 1269
The airborne electromagnetic discovery of the Detour zinc-copper-silver deposit, northwestern Quebec, L. E. Reed 1278
Transient response of an induction logging tool in a borehole, W. C. Chew, S. Gianzero, and K. J. Kaplin 1291
The temperature stabilization of a borehole, Y. Leblanc, L. J. Pascoe, and F. W. Jones 1301
A combination of electrical resistivity, seismic refraction, and gravity measurements for groundwater exploration in Sudan, R. A. van Overmeeren 1304

**DISCUSSION**

On: «Frequency-independent background internal friction in heterogeneous solids» (Baxter H. Armstrong), by G. with reply by author 1314

Geophysical activity in 1980, R. J. Senti 1316
Dip limitations on migrated sections as a function of line length and recording time, H. B. Lynn and S. Deregowski 1392

A novel approach to seismic signal processing and modeling, J. M. Mendel, J. Kormylo, F. Aminzadeh, J. S. Lee, and F. Habibi-Ashrafi 1398

Seismic velocities and electrical resistivity of recent volcanics and their dependence on porosity, temperature, and water saturation, A. W. Ibrahim and G. V. Keller 1415

Vol. 46, No. 10, October 1981

President’s Page: Geophysics and Toxic Waste Disposal, David W. Strangway 1363

Estimating acoustic attenuation from a quantitative seismic profiler, R. C. Tyce 1364

Recursive removal and estimation for minimum-phase wavelet, M. A. Al a m and C. J. Sicking 1379

Dip limitations on migrated sections as a function of line length and recording time, H. B. Lynn and S. Deregowski 1392

A novel approach to seismic signal processing and modeling, J. M. Mendel, J. Kormylo, F. Aminzadeh, J. S. Lee, and F. Habibi-Ashrafi 1398

Seismic velocities and electrical resistivity of recent volcanics and their dependence on porosity, temperature, and water saturation, A. W. Ibrahim and G. V. Keller 1415

Data-adaptive polarization filters for multichannel geophysical geophysical data, J. C. Samson and J. V. Olson 1423

An experimental test of a large-volume plastic detector for use in aerial gammaray spectroscopy, J. S. Duval and J. A. Pitkin 1432

The physical foundation of formation Ht-hology logging with gamma rays, W. Bertozzi, D. V. Ellis, and J. S. Wahi 1439

Dellmeation of a low-velocity body under the Roosevelt Hot Springs geothermal area, Utah, using teleseismic P-wave data, R. Robinson and H. M. Iyer 1456

A microearthquake survey In the Ngawha geothermal field, New Zealand, R. Robinson 1467

The physical foundation of formation Ht-hology logging with gamma rays, W. Bertozzi, D. V. Ellis, and J. S. Wahi 1439

Dellmeation of a low-velocity body under the Roosevelt Hot Springs geothermal area, Utah, using teleseismic P-wave data, R. Robinson and H. M. Iyer 1456

A microearthquake survey In the Ngawha geothermal field, New Zealand, R. Robinson 1467

DISCUSSIONS

On: «Shear zones in North Egypt Interpreted from gravity data» (S. Rlad), by A. I Bayoumi and E. M. Abdelrahman with reply by author 1471

On: «Design parameters for aerial gam­ma-ray surveys» (J. A. Pitkin and J. S. Duval), by S. Parker Gay, Jr. with reply by authors 1474

Vol. 46, No. 11, November 1981

President’s Page: Responsibilities of Growth, Wee N. Rabey, 1507

An Introduction to the generalized recip­rocal method of seismic refraction Inter­pretation, D. Palmer 1508

Seismic amplitude anomalies associated with thick First Leo sandstone lenses, eastern Powder River basin, Wyoming,

Wavelet estimation and deconvolution, D. W. Oldenburg, S. Levy, and K. P. Whit-rtall 1528

Maximum uncertainty of interval velocity estimates, Z. Hafnal and I. T. Serada 1543

Measurements of attenuation from vertical seismic profiles, P. S. Hauge 1548


Densities determined from surface and subsurface gravity measurements, B. A. Sissons 1568

Interpretation of magnetic anomalies due to dikes: The complex gradient method, D. Atchuta Rao, H. V. Ram Babu, and P. V. Sanker Narayan 1572

Magnetite mapping with a multicoll airborne electromagnetic system, D. C. Fraser 1579

Very low-frequency electromagnetic Interpretation using tilt angle and ellipticity measurements, A. S. Saydam 1594

Relationships among the slopes of lines derived from various data analysis techniques and the associated correlation coefficient, S. C. Cohen 1606

A new torsional shear-wave generator, I. J. Won and J. W. Clough 1607

North American Gravity and Magnetic Anomaly Workshops, W. J. Hfnze N. W. O’Hara, M. S. Retford, and J. G. Tanner 1611

COCORP: Laramie Range Area, Wyoming, S. Kaufman 1618

Vol. 46, No. 12, December 1981

President’s Page: SEG Is Universal, Kevin M. Barry 1637

Wave field extrapolation techniques in seismic migration, a tutorial, A. J. Berk-hout 1638

The Vibroseis system: A high-frequency tool, Wm. I. Chapman, G. L. Brown, and D. W. Fair 1657

Rapid convergence of some seismic processing algorithms, J. H. Rosenbaum and G. F. Boudreaux 1667

A three-dimensional study of seismic diffraction patterns from deep basement sources, F. S. Schlitt, S. Kaufman, and G. H. Long 1673

Problems and interpretation of COCORP deep seismic, reflection data, Wind River range, Wyoming, R. L. Zawislak and S. B. Smithson 1684

The inverse problem of the direct current conductivity profile of a layered earth, S. Coen and M. W. H. Yu 1702

Relation of certain geometrical features to the dielectric anomaly of rocks, P. N. Sen 1714

Interpretation of three-component borehole magnetometer data, J. B. C, Silva and G. W. Hohmann 1721

Continuation of heat flow data: A method to construct isotherms in geothermal areas, C A. Brott, D. D. Blackweli, and P. Morgan 1732

Frequency domain lefts sgnéres Inversion of thick dike magnetic anomalies using Marquardt arithlyg, K. K. Khurana, S. V. S. Rao, and P. C. Pal 1745
GEOPHYSICAL PROSPECTING
1981, VOL. 29
FEBRUARY

Number 1
Page

0. E. NAESS and L. BRULAND:
Velocity Analysis Using iterative Stacking.................................1

O. KOEFORD:
Aspects of Vertical Seismic Resolution....................................21

G. E. BRETHAUSER, D. L HEALEY and C. H. MILLER:
Statistical Analysis of the Gravity Method of Calculating the Depth to the
pre-Cenozoic Surface in Yucca Flat, Nevada Test Site...................31

M. OKABE:
Boundary Element Method for the Arbitrary Inhomogeneities Problem in
Electrical Prospecting..............................................................39

G. J. PALACKY:
The Airborne Electromagnetic Method as a Tool of Geological Mapping ... 60

A. ERCAN:
Quasi-analytic Convolution Solution of the Electromagnetic Field.........89

B. B. BHATTACHARYA and N. ROY:
A Note on the Use of a Nomogram for Self-Potential Anomalies........102

R. SANTINI and R. ZAMBRANO:
A Numerical Method of Calculating the Kernel Function from Schlumber-
ger Apparent Resistivity Data......................................................108

R. D. BARKER:
The Offset System of Electrical Resistivity Sounding and Its Use with a
Multicore Cable........................................................................128

APRIL

Number 2
Page

G. NEUMANN:
Determination of Lateral Inhomogeneities in Reflection Seismlcs by Inver-
sion of Traveeltme Residuals.......................................................161

E. RIETSCH:
Reduction of Harmonic Distortion in Vibratory Source Records.........178

R. GODEREY and F. ROCCA:
Zero Memory Non-Linear Deconvolution........................................189

J. W. SATTELLEGE, J. RHODE H. EGBERS, G. P. DOHR, P. K. STILLER and
J. A. ECITTERHOFF:
INMOD — Two Dimensional Inverse Modeling Algorlth Based on Ray
Theory..........................................................................................229

MADENCİLİK, MART - HAZİRAN 1981 67
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. R. GUTOWSKI and A. L. FRISILLO</td>
<td>ARMA Processing of Ultrasonic Data for Absorption Measurements</td>
<td>241</td>
</tr>
<tr>
<td>L. ESKOLA and H. HONGISTO</td>
<td>The Solution of the Stationary Electric Field Strength and Potential of a Point Current Source In a 2i-Dimensional Environment</td>
<td>260</td>
</tr>
<tr>
<td>M. PERIC</td>
<td>Exploration of Burundi Nickeliferous Latérites by Electrical Methods</td>
<td>274</td>
</tr>
<tr>
<td>D. VOGELSANG</td>
<td>Relations of IP Decay-Curve Statistics and Geology</td>
<td>288</td>
</tr>
<tr>
<td>M. PELTONIEM</td>
<td>Comments on «Numerical VLF Modeling» and «VLF Anomalies from a Perfectly Conducing Half Plane Below an Overburden»</td>
<td>288</td>
</tr>
<tr>
<td>OLLE OLSSON</td>
<td>Reply to Comments on «Numerical VLF Modeling» and «VLF Anomalies from a Perfectly Conducing Half Plane Below an Overburden»</td>
<td>303</td>
</tr>
<tr>
<td>D. GUPTASARMA</td>
<td>Comments on «A Theorem for Direct Current Regimes and Some of Its Consequences» and Some Related Papers</td>
<td>308</td>
</tr>
<tr>
<td>AMALENDU ROY</td>
<td>Reply to Comments by D. Guptasarma</td>
<td>312</td>
</tr>
<tr>
<td>A. R. BROWN, O. G. DAHM and R. J. GRAEBNER</td>
<td>A Stratigraphie Case History using Three-Dimensional Seismic Data in the Gulf of Thailand</td>
<td>327</td>
</tr>
<tr>
<td>G. NANDA KUMAR and M. S. VIJAYA RAGHAVA</td>
<td>On the Significance of Amplitude Studies In Shallow Refraction Seismics</td>
<td>350</td>
</tr>
<tr>
<td>WILLIAM J. VETTER</td>
<td>A Forward Generated Synthetic Selmo gram for Equal-Delay Layered Media Models</td>
<td>363</td>
</tr>
<tr>
<td>S. M. DEREGOWSKI and F. ROCCA</td>
<td>Geometrical Optics and Wave Theory of Constant Offset Sections in Layered Media</td>
<td>374</td>
</tr>
<tr>
<td>A. HUSSAIN, G. WALACH and F. WÊBER</td>
<td>Underground Gravity Survey in Alpine Regions</td>
<td>407</td>
</tr>
<tr>
<td>P. BALDI</td>
<td>New Aspects In the Inversion of Gravity Profiles by Polynomial Method</td>
<td>426</td>
</tr>
<tr>
<td>A. ROY and M. PODDAR</td>
<td>A Simple Derivation of Selgel’s Time Domain Induced Polarization Formula</td>
<td>432</td>
</tr>
<tr>
<td>R. K. MAJUMDAR and S. DATTA</td>
<td>I. P. and Resistivity Model Studies over Thin Dykes</td>
<td>438</td>
</tr>
</tbody>
</table>
O.P. VERMA: 
Electromagnetic Response of Fold Models in a Uniform Field .......... 451

T. LEE: 
Direct Interpretation of Resistivity Data over Two-Dimensional Structures 462

M. H. SAFAR: 
Discussion on «Interaction Effects in Marine Seismic Source Arrays»........ 470

J. E. SINCLAR: 
Reply to M. H. Safar's 'Discussion on «Interaction Effects in Marine Seismic Source Arrays»' .................................................. 476

AUGUST

Number 4

Page

Report by the Secretary-Treasurer and the Editor for 1980 .................. 501

W. E. LERWILL:
The Amplitude and Phase Response of a Seismic Vibrator ................. 503

E. EISNER:
The Kunetz Relations ............................................................... 529

R. MEISSNER and M. A. HEGAZY:
The Ratio of the PP-to the SS-Reflection Coefficient as a Possible Future Method to Estimate Oil and Gas Reservoirs ................................. 533

H. A. K. EDELHANN:
SHOVER: Seawave Generation by Vibration Orthogonal to the Polarization ................................................................. 541

K. HELBIG:
Systematic Classification of Layer-Induced Transverse Isotropy ........... 550

S. SPTTZ:
E-Polarization Boundary Conditions Above Laterally Non-Uniform Conductors for a Simple Induction Mechanism .............................. 578

G. BRASS, H. FLATHE and R. SCHULZ:
Resistivity Profiling with Different Electrode Arrays over a Graphite Deposit 589

P. D. JACKSON:
Focused Electrical Resistivity Arrays: Some Theoretical and Practical Experiments ................................................................. 601

R. J. LYITLE, D. I. LAGER, E. F. LANE, J. D. SALISBURY and J. T. OKADA:
Fluid-Flow Monitoring Using Electromagnetic Probing ....................... 627

D. C. FRASER:
Contour Map Presentation of Dipole-Dipole Induced Polarization Data .... 639
W. J. JANKOWSKY:
Forty-Third Meeting of the European Association of Exploration Geophysicists, held at Venice, 26-29 May 1981, Presidential Address, Communication Between Geophysicists ..............................669

D. BILGERI and A. CARLINI:
Non-Linear Estimation of Reflection Coefficients from Seismic Data ..............672

P. BOIS:
Determination of the Nature of Reservoirs by Use of Pattern Recognition Algorithm with Prior Learning .........................................................687

H. ÖZDEMİR:
Optimum Hyperbolic Movcoul Filters with Applications to Seismic Data 702

FALAH A. I. HAMDI and D. TAYLOR SMITH:
Soli Consolidation Behavior Assessed by Seismic Velocity Measurements 715

M. H. SAFAR and P. NEWMAN:
Low Frequency Standard Hydrophone for Calibrating Line Hydrophone Arrays (Seismic Streamers) and Marine Seismic Sources ..................................730

JERRY M. MENDEL:
A Time-Domain Approach to the Normal-Incidence Inverse Problem .............742

A. J. BERKHOOUT and B. A. DE JONG:
Recursive Migration in Three Dimensions .............................................758

M. BICHARA, J. C. ERLING et J. LAKSHMANAN:
Technique de Mesure et d'Interprétation Minimisant les Erreurs de Mesures en Microgravimètrie (Measurement and Interpretation Procedure for Minimization of Microgravimetry Errors) ........................................782

H. SCRIBA:
Computation of the Electric Potential in Three-Dimensional Structures ......790

D. LE MASNE and G. VASSEUR:
Electromagnetic Field of Sources at the Surface of a Homogeneous Conducting Halospace with Horizontal Anisotropy: Application to fissured Media ..................................................................................803

A. APPARAO:
Additional Reply to Comments by Gupta Sarma on «A Theorem for Direct Current Regimes and Some of Its Consequences» and Some Related Papers ..........................................................................................822

F. AMINZADEH and J. M. MENDEL:
Filter Design for Suppression of Surface Multiples In a Non-Normal Incidence Seismogram .................................................................835
S. A. GREENHALGH and D. W. KING:
Curved Raypath Interpretation of Seismic Refraction Data. ................. 853

K. KUNARATNAM:
Simplified Expressions for the Magnetic Anomalies due to Vertical Rectangular Prisms. .................................................. 883

J. KARWATOWSKI and G. M. HABBERJAM:
A Tunnel Resolution Investigation Using an Automated Resistivity Tank Analog. ......................................................... 891

G. MALIOTIS and M. AFRAB KHAN:
A Comparison of IP Transient Shapes over Disseminated and Massive Sulfide Sheets in the Lower Pillow Lavas of Cyprus. .......................... 906

G. LOSITO and G. RNZI-CONTINI:
Laboratory instrumentation to Study Changes of Electrical Conductivity of Rocks with Changes of Frequency, Temperature and Pressure. ....... 923

G. J. PALACKY, I. L RITSEMA and S. J. DE JONG:
Electromagnetic Prospecting for Groundwater in Precambrian Terrains in ................................................................. 932

A. ROY:
Comments on «The Offset System of Electrical Resistivity Sounding and its Use with a Multicore Cable» by R. D. Barker. .......................... 956

R. D. BARKER:
Reply to Comments by A. Roy.............................................. 958

13 GLÜCKAUF 1981
ZEITSCHRIFT FUR TECHNIK UND WIRTSCHAFT DES BERGBAUS

Gauesusbruche

Palm: Tätigkeit der Arbeitsgemeinschaft Gasausbrüche von 1976 bis 1980 753
Palm: Verfahren zur Prognose und Verhütung von Gasausbrüchen 653
Noack und Janas: Beurteilung der Gasausbruchsgefahr 759
Kowing: Geologische Voraussetzungen für Gasausbrüche 763
Elektrifizierter Sprengvortrieb
Lensing-Hebben: Der elektrifizierte Sprengvortrieb des Bergwerks Walsum 766
Tekathen: Die maschinenotechnische Ausrüstung des elektrifizierten Sprengvortriebs 768

MADENCİLİK, MART - HAZİRAN 1981 71
Mormann: Elektroausrüstung des elektrifizierten Streckenvortriebes 773

Wild: Neuentwicklungen sowie organisatorische Maßnahmen bei der Sprengtechnik 774

Bralck: Organisation des Vortriebs beim elektrifizierten Sprengvortrieb 778

Lensing-Hebben: Elektrifizierter Sprengvortrieb. Zusammenfassung und Ausblick 781

Bergbaunachrichten

Lochmann und Breuker: Technische Neuheiten. Firmenschriften. Vor 50 Jahren in Glückauf Veranstaltungen. Persönliches 749

Burckhardt: Umschau im Bergbau 782

Jahreshauptversammlung des AIME in Chicago

Volks- und Energiewirtschaft

Lange: 25 Jahre Kohlepolitik 784

Potential und Möglichkeiten der Biomasse 792

Leistungsbilanzdefizite nach Ötprelsanhebungen von 1979/80 fast verdoppelt 796

Wirtschaftsstatistik: Zahlen aus der Energiewirtschaft und der Eiseinindustrie Januar 1981 798

Gesellschaftsberichte

Ruhrgasse AG: Hobe Vorleistungen verhindern Leistungssteigerung 799

VEW: Ende der 80er Jahre Verstromung von 10 t Steinkohle 800

Ruhrgasse AG: Erdgasbezug gut gestreut 800

14 Dritles Kofloquium Kunststoffe im Bergbau am 24. Mai 1981 in Bochum

Fronz: Bröffnung 811

Splnka: Fördergurte im Steinkohlenbergbau unter Tage 812

Eisfeld: Entstehung und Vermeldung elektrostatischer Zündgefahren bei Knuststoffteilen 817

Marth: Behördliche Regieungen für den Kunststoffeinsatz im Bergbau unter Tage 820

Wilcynski: Kunststoffe in Aufbereitungsanlagen der Ruhrgasse AG 825
Technik und Betrieb 6 August 1981

Henkel und Kramer: Entwicklungs- und Erprobung neuer aktivierter Grawinnererungstechniken 919
Plum und Seeger: Der Einsatz von Schnellscheiben im Betrieb 925
Olaf und Steudel: Prozeprechner für den Grubenbetrieb 927
Grave: Verbesserung der Schaltungssicherheit von hydraulischen Ausbausteuerungen 929
Kammer: Der erforderliche Stahlaufwand für Strecken mit Gleitbogenausbau 933
Drozdewski u. a.: Ergebnisse des Untersuchungsvorhabens «Tiefentektonik des Ruhrkarbons» 935
Ascho: Nutzung von Abwärme bei der Ruhrkohle AG 943

Bergbaunachrichten

Technische Neuheiten - Vor 100 Jahren im Glückauf - Veranstaltungen - Persönliches 915

Umschau im Bergbau

Sabel: Konstruktion zur Absicherung eines verfarmten Schachtes 947

Volks- und Energiewirtschaft

Peter und Schnapp: Der Weltkohlenmarkt 1981 und 1982 948
Schumann: Strukturwandel weltweiter Energiemärkte 954
Gierhardt und Schröer: Variable Leistungszulage im Steinkohlenbergbau 966
Semrau: Der deutsche Steinkohlenbergbau im 1. Halbjahr 1981 871
Gabel: Primärenergieverbrauch im ersten Halbjahr 1981 973

Wirtschaftsstatistik - Energiewirtschaft und Eisenindustrie Jan. bis Febr 1981 974
Gesellschaftsberichte

Veba AG: In der Kernkraft vorn

Rheinbraun: Verhältnis von Abraum zu Kohle wird ungünstiger

Recht im Bergbau

Verantwortlichkeit für das Verfüllen eines Tagesbruchs

16 Steinkohlentag 1981

Erasmus Bund Jochimsen Thorn

Hauptveranstaltung am 11. Juni 1981 in Düsseldorf

Begrüßung und Einführung

Kohle — Ein Weg in die Zukunft

Vorrang - Politik für die einheimische Kohle wird fortgesetzt

Aktuelle Fragen der Europäischen Gemeinschaft

Technische Vortragsveranstaltung am 11. Juni 1981 in Düsseldorf

Begrüßung und Einführung

Künftige bergtechnische Aufgaben des deutschen Steinkohlenbergbaus

Bauwürdigkeit und Verfugbarkeit von Steinkohlenvorkommen in der Welt

Die Entwicklung des Steinkohlenberghauses in Übersee

Technische Vortragsveranstaltung am 12. Juni 1981 in Düsseldorf

Einführung

Zuschnitt und Rationalisierung von Bergwerken zur Kapazitätserweiterung

Entwicklungsmöglichkeiten des Strebbaus

Förder- und Versorgungstechnik im Umbruch?

Sicherheitliche Probleme der zunehmenden Teufe und ihre Bewältigung

Schlupwort

Bergbaunachrichten

Technische Neuheiten - Übemandschriften - Vor 50 Jahren im Glückauf - Veranstaltungen - Persönliches
Umschau im Bergbau

Haudan : Deutsche Bergbaumaschinenberstoller auf der 53. Internationalen Messe in Posen 1067

Jacklsch : Bergtechnische Tagung des Kalivereins am 15. Juni 1981 in Düsseldorf 1068

Wirtschaftsstatistik : Kennzahlen aus dem Kohlenbergbau Januar bis Mai 1981 1069

Friihtragender Ausbau

Vortragsveranstaltung des Fachausschusses «Grubenausbau und Gebirgsmechanik» am 17. Mai 1981 in Essen

Weber : Einführung 1083

Grundmann : Bessere Gebirgsbeherschung durch Hinterfüll und Dammbautechnik 1084

Siepmann : Erfahrungen mit der Hinterfüll - und Dammbautechnik auf dem Bergwerk Monopol 1085

Kammer : Planung von Abbaustrecken mit Hinterfüll - und Dammbautechnik 1088

Willke : Hinterfülltechnik in einem Querschlag bei hohem Gebirgsdruck 1090

Krone : Das Verhalten von hinterfülltem Streckenausbau 1093

Lülf : Planung der Baustoffversorgung für das Bergwerk Haus Aden 1096

Bessere Gebirgsbeherrschung durch Ankerausbau 1099

Maiweg : Anker Turstockausbau auf dem Bergwerk Lohberg Ankerausbau in Rechteck strocken auf dem Bergwerk Ensdorf 1101

Keck : Erfahrungen mit Ankerausbau und Saumversatz auf dem Bergwerk Niederberg 104

Götze : Planung von Ankerausbau in Floz - und Abbaustrecken 1107

Grotowsky : Fortschritte in der Gebirgsbeherrschung Technik und Betrieb 1111

Mertens : Maschfneller Streckenvortrieb im deutschen Steinkohlenbergbau 1114

Bergbaunachrichten

Technische Neuheiten - Vor 100 Jahren Im Glückauf - Veranstaltungen - Persönliches 1079
Volks - und Energiewirtschaft
Kühner Rohstofrunde: Das CO₂-Problem und die Zukunft unseres Klimas

Blaschof :  Çinführung 1112
Degeri8 :  Zur Thcmatik 1112
Rohn :  Das 002 - Problem und die Zukunft unseres Klimas 11123
Rummert:  Diskussion 11132
Die Ötelnkünfte der Opec - Läder während der zweiten Ölkrise 111137
Posner:  Jahresbericht der Internationalen Atomenergie - Organisation 111139
Wirtschaftsstatistik - Energiewirtschaft und Eisenindustrie 111141

Gesellschaftsberichte
Saarbergwerke AG : Förderaufstockung gelungen 111142
C. Deilmann AG : Gestiegener Konzernumsatz, rückschließlich Förderung 111142

18 Bergbau 81 - Berichtsausgabe Sapt. 1961
frresberger u. a. :  Neue Entwicklungen beim Schreltausbau 111155
Herms und Sirges :  Elektrohydraulische Ausbausteuerung 111161
Schwolow und Kramer :  Schalend© Gewinnung 111163
Plum und Wildforster :  Schneidende Gewinnung 111167
Dinter und wiechers :  Strebfoerderstechnik 111169
Ahrens u. a. :  Antriebstechnik 111174
Voss:  Blasversatz 111177
Schuermann :  Strebbrandtechnik 111178
Götze und Krahe :  Streckenausbau 111183
Mortens :  Maschineiler Vortrieb 111189
Feistkorn und Maichin :  Sprengvortrieb 111198
Wild :  Sprengtechnik 111205
Klein :  Schachtetbeufen und Schachtausbau 111208
Giei, Grofe und Ulrich :  Seigerfördertechnik 111209
Schroder und Zimmermann :  Wagenforderung 111121

MADENCILIK, MART - HAZİRAN 1981 77
Schütz und Thüner: Traktionsbatterien
Spink a: Gurtlösung und Brecher
Scheidat und Voss: Neuerungen auf dem Gebiet der Bunker und seigeren Fließfördermittel
Hartlieh von Wallthor: Materialtransport
Hielen und Leyermann: Gießlospflanzen
Schlitt: Dieselmotoren


Behrenbeck: Die Aufbereitungsanlage des Bergwerks Neu Monopol
Arauner: Abbau geringmächtiger RÖze in druckhaftem Gebrige
Daret: Gießlostechnik in der Provence
Baumann u. a.: Steigerung der Effektivität von Hochdruckwasserstrahlen
Hesse: Schwerbehinderte Mitarbeiter bei der Bergbau AG Westfalen

Umschau im Bergbau

Tilmann: Jahresberichte 1980 des Deutschen Braunkohlen Industrie Vereins e. V.
Fronz und Peter: Sozialwissenschaftliche Forschung im Steinkohlenbergbau
Reuther: Jahresbericht 1980 der südafrikanischen Bergwerkskammer
Pesch: Erste australische Konferenz für Steinkohlenaufbereitung
Finze: Normung der Rohstoffuntersuchungen im Steinkohlenbergbau

Volks- und Energiewirtschaft

von Ilsenn: Gegenwörtige und zukünftige Energiesituation
Wirtschaftsstatistik: Energiewirtschaft und Eisenindustrie Jan. bis April 1981
Recht im Bergbau

Witlecke: Die Förderabgabe im Bundesberggesetz 1338
Neuer Filterselbststreter - Plan 1341


Hövelhaus: Die Wirtschaftlichkeit von Kühllmapnahmen 1353
Knissel und Wese: Verbesserung des Lösevorgangs von Teilschmitt - Vortriebsmaschinen 1360
Kleinekorto: Blindelschlauchleitungen für Schreitausbau 1366
Pöhler: Sozialwissenschaftliche Forschung für die betriebliche Praxis 1369
Gebhardt: VDE 0118 «Errichten elektrischer Anlagen im Bergbau unter Tage» 1372

Habermehl und Bellenberg: Automatische Erfassung von Betriebsdaten auf der Vercushskokerei Prosper 1375
Grünenberg: Studienreform an der Fachhochschule Bergbau 1378
Bergbaunachrichten

Technische Neuheiten - Vor 100 Jahren im Glöckauf - Veranstaltungen - Persönliches 1349

Umschau im Bergbau

Tilmann: Aus der Tätigkeit des Braunkohlenbergbaus 1380
Montons: Aus dem Jahresbericht 1960 der Emschergenossenschaft 1384
Kundel: Tagung «Bergmannisches Ostrava 81» 1386
Sammelliste «Fördergurte mit Textilienfugen» 1392
Volks- und Energiewirtschaft

Relchert: Verdrängung des Öls durch Kohle im industriellen Wärmemarkt 1395
Wirtschaftsstatistik - Kohlenbergbau Januar bis Juli 1981 1399

Gesellschaftsberichte

Boliden AB: Kraftige Erhöhung des Umsatzes in 1980 1400
Granges AB: Übernahme durch AB Electrolux 1401

MADENCİLİK, MART «HAZİRAN» 1981 79
<table>
<thead>
<tr>
<th>Seite</th>
<th>Titel</th>
<th>Autoren</th>
<th>Seite</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Technik und Betrieb</td>
<td></td>
<td>5 Nov. 1981</td>
</tr>
<tr>
<td></td>
<td>Haas</td>
<td>Entwicklungen Im Strebau der Saarbergwerke AG</td>
<td>1413</td>
</tr>
<tr>
<td></td>
<td>Herwig</td>
<td>Die Wirkung dee Gebirgsdrucks auf den Hangendzustand Im Streb</td>
<td>1419</td>
</tr>
<tr>
<td></td>
<td>Lan, Marten und Dinter</td>
<td>Betriebserfahrungen mit Untertrummverschlußblechen</td>
<td>1423</td>
</tr>
<tr>
<td></td>
<td>Handlck und Vordermark</td>
<td>Auswechsel eines Gurtes In seiner Gesamtlänge</td>
<td>1426</td>
</tr>
<tr>
<td></td>
<td>Hlnderfeld</td>
<td>Ein Bohrwagen als Transport - und Rüsthilfe</td>
<td>1429</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;Technische Neuheiten - Vor 50 Jahren Im Glickauf - Veranstaltungen - Persönliches</td>
<td>1407</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umachau Im Bergbau</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ludwig</td>
<td>Aus dem Jahresbericht des Steinkohlenbergbauverwaltungs für des Jahr 1980</td>
<td>1431</td>
</tr>
<tr>
<td></td>
<td>Steinhage</td>
<td>Vortrejsveranstaltung der Fachveröffentlichung Auslandsbergbau</td>
<td>1439</td>
</tr>
<tr>
<td></td>
<td>Finze:</td>
<td>Normung auf dem Gebiet der Steinkohlenaufbereitung</td>
<td>1440</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sammelliste «Fördergurte mit Stahlseileilnda»</td>
<td>1442</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Volks - und Energieirtschaft</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paszkiewicz</td>
<td>Entwicklung des Kohlenbergbaus in Polen</td>
<td>1443</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wirtschaftsstatistik : Energiewirtschaft and Eisenindustrie Jan. bis Mai 1981</td>
<td>1449</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gesellschaftsberichte</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outokumpu Oy: Weitere Produktionssteigerung bei Edelstahl und Nickel</td>
<td>1449</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Luossavaara - Kurunavaara Aktiebolaget (LKAB)</td>
<td>1450</td>
</tr>
<tr>
<td></td>
<td>Harnisch</td>
<td>125 Jahre Harpen</td>
<td>1461</td>
</tr>
<tr>
<td></td>
<td>Hegermann, Klerdorf und Trenz</td>
<td>Das Harstellen eines großen Grubenraumes auf dem Bergwerk Osterfeld</td>
<td>1473</td>
</tr>
<tr>
<td></td>
<td>Siepmann</td>
<td>Transport pastenförmiger Staubbindemittel durch Bohrleitungen</td>
<td>1477</td>
</tr>
</tbody>
</table>
Schenke und Plum: Blindschacht Kompensationsanlagen im Steinkohlenbergbau unter Tage.

Hermes: Eigensichere elektrische Anlagen nach VDE 0118

Kundel: Abbau donner Röze auf der Grube Paskov

Bergbaunachrichten

Technische Neuheiten - Vor 100 Jahren im Glückauf - Veranstaltungen - Persönliches

Umschau im Bergbau

Voss: Mechanisierung der Wegfullarbeit im Anthrazitbergbau der Dauphine

Baumann: In einem Monat 1 502 m Fötzstrecke auf cam Bergwerk Zabrze aufgefahren

Die Aufgaben des Kohlenbergbaus der UdSSR im 11. Funfjahrplan

Sammelliste «Gurtförderer - Zubehör»

Vols - und Energiewirtschaft

Mohnfeid: Die Weltenergieremarkte zwischen Entspannung und Strukturwandeln

Lang: Chancen und Probleme bei der Nutzung der Sonnenenergie

Grabel: Primärenergieverbrauch in den ersten drei Quartalen 1981 stark rOckläufig

Wirtschaftsstatistik: Kohlenbergbau Januar bis August 1981

Recht (m Bergbau

Anfechtung einer Betriebsplanzulassung


Schwarting u. a.: Untertageeierprobung eines Grawinnungsverfahrens mit Hochdruckwasserstrahlen

Klein: Die Schachtbaumaßnahmen beim Selby Proiekt

Stoppa: Eine universelle Schwachgas Absaugungsanlage

von Treskow: Grubengas, Grubenktima und WetterfOhrung im Steinkohlenbergbau

Klinkenberg: Die Bergbauwissenschaft und die Aachener Bergbauabteilung

MADENCİLİK, MART - HAZİRAN 1981
Schtüter: Erfahrungen mit einem ferngesteuerten Ranglerfahrzeug

Bergbaunachrichten

Technische Neuheiten - Vor 50 Jahren im Glückauf - Veranstaltungen - Persönliches

Umschau im Bergbau

Wiewel: Die Aufwendungen des deutschen Steinohlenberbaus für Forschung und Entwicklung

Hornev: Aus dem Jahresbericht 1980 der Westfälischen Berggewerkschaftskasse

Montens: Aus dem Jahresbericht 1980 des Lipperverbandes

Auszug aus der Sammelliste «Berichtsmittet aus Kunststoffen»

Voiks- und Energiewirtschaft

Jamme: Die Charbonnages de France im Geschäftsjahr 1980

Schiffer: Ölwnirtschaft und Ölpolitik Großbritanniens

Wirtschaftsstatistik - Energiewirtschaft und Eisenindustrie Jan. bis Juni 1981

Recht im Bergbau

Keine unbegrenzte Fortdauer der Bergaufschlach

24 Technik und Betrieb 17 Dez. 1981

Voss: Hochleistungsstreb im Flöz Albert der Zeche La Houve

Bronder: Transporteinrichtungen für Streunzüge in der geneigten Lagerung

Mücke und Uhlig: Neuentwicklungen in der Klimatechnik des südafrikanischen Goldbergbaus

von Treskow und Fitzner: Das Absaugen von Methan im deutschen Steinkohlenbergbau im Jahre 1980*

Otsuka:

Hahn: Der Bergbau in der Metalgesellschaft AG

Carr: Automatische Reinigung von Koksofentüren mit Hochdruckwasserstrahlen

MADENCİLİK, MART - HAZİRAN 1981
Bergbaunachrichten
Technische Neuheiten - Vor 100 Jahren im Glückauf - Veranstaltungen - Persönliches

Umschau im Bergbau

Kaiser
Jahresbericht der Bergverwaltung Nordrhein Westfalen 1980 1612

Kreuder
DIN 22 110 Teil 2 «Fördergurte mit Textileinlagen» 1614

Noack und Janas
Forschung und Entwicklung auf dem Gebiet der Gasausbrüche 1615

Benthaus
Eröffnung des technisch wissenschaftlichen Vortragewesens 1619

Schlükor
Röcksehau auf die bergbauliche Fachtagung der GDMB auf der Bergbau 81 1621

Kademecher
Internationale Fachmesse Schwel(ten und Schneiden 1624

Bachstroem
Hundert Jahre Fachzeitschrift «Stahl und Eisen» 1626

Broscheit:
Bergbau - Betriebsblatt BB23 340» Knieschützen» 1628

Volks- und Energlewirtschaft
Dritte Fortschrreitung des Energieprogramms 1629

Rummert:
Der Weltölmarkt nach der Genfer Opec-Konferenz 1632

Wirtschaftsstatistik: Kennzahlen aus dem Kohlenbergbau Jan. bis Sept. 1981 1635

INDUSTRIAL MINERALS

January 1981

Company News and Mineral Notes (45); Processing and Equipment (50); Diary (51); Publications (51); Fillers and Extenders (52); IM Index July-December 1980 (53); Price5 55,56, 57
Index to Advertisers 58

Comment 7
World of Minerals 9
The impact of energy on refractory raw materials 19
Sulphur-the phosphate limiter 29
US bentonite markets - one up, two down 37
Freights : strong end to 1980 43
Australian mineral statistics 45

February 1981

Comment 7
World Minerals 9
The Industrial Minerals of Austria 21

MADENCİLİK, MART - HAZİRAN 1981 83
Caustic magnesia markets — agricultural oversupply and industrial underdemand 43
Iron oxide minerals — the other uses 53
Spanish potash — problems for Potas sas de Navarra 64
Freights: Early cloud, outlook uncertain 67
Company News & Mineral Notes (71); Processing/Equipment (75); People (77); Diary (78); Publications (78); Fillers and Extenders (81). Prices 83, 84, 85
Index to Advertisers 86

March 1981

Comment 7
World of Minerals 9
Industrial minerals and rocks in Czechoslovakia 19
US soda ash — Green River’s solution — Europe’s problem? 37
Freights: Healthy undertones 41
Statistics 43
Company News and Mineral Notes (47); Diary (52): Fillers and Extenders (54); Publications (54); People (55); Processing/Equipment (56). Prices 59, 60, 61
Index to Advertisers 62

April 1981

Comment 7
World of Minerals 9
Feldspathic fluxes — the rivalry reviewed 21
Industrial diamonds — natural or synthetic? 47
Man-made vitreous fibres and health 61
US industrial minerals in 1980 73
Freights: Future signs optimistic 78
Company News and Mineral Notes (81); Publications (85); Processing/Equipment (87); Diary (88); People (89); Fillers and Extenders (89). Prices 91, 92, 93
Index to Advertisers 94

May 1981

Comment 7
World of Minerals 9
Annual Report Highlights 20
Burnt lime in Western Europe — the recession bites 25
The industrial minerals of Switzerland — construction and trading lead 53
Four Corners phosphate Mine — progress and potential 61
Freights: Coal strike consequences 68
Company News and Mineral Notes (71); Processing / Equipment (77); Diary (78); Publications (79); People (81); Fillers and Extenders (81). Prices (83, 84, 85)
Index to Advertisers (86)

June 1981

Comment 7
World of Minerals 9
Letter to the Editor 18
Annual Report Highlights 20
Minerals for frits and glazes — value in variety 23
UK aggregates — home decline prompts investment away 37
Profile on Bikita - processed petaite the new priority 51
Freights: Bearish conditions prevail 55
Company News & Mineral Notes (57); Publications (61); Processing Equipment (62);
Diary (64); Fillers & Extenders (65); People (65); Prices (67, 68, 69)
Index to Advertisers (70)

July 1981

Comment 7
World of Minerals 9
Annual Report Highlights 20
The industrial minerals of Tanzania 23
Southern African Metals and Minerals in a World Context 41
A supply/demand analysis of the US phosphate industry 47
ECC opens Uxhe plant — coating carbonate is key product 51
Freights: Coal strike end brings some encouragement 53
Company News and Mineral Notes (55); Diary (60); Fillers & Extenders (61); Publications (62); People (62); Processing /Equipment (63); IM Index January-June 1981 (65); Prices 67, 68, 69; Index to Advertisers 70

August 1981

Comment 7
World of Minerals 9
Wollastonite — production and consumption continue to climb 26
Brett Bentonite — evolving into the market 27
First Mineral Sands Symposium— 43
Microfine Minerals — new chalk whiting capacity at Driffield 47
The 17th Forum — a report from Albuquerque 50

September 1981

Comment 7
World of Minerals 9
The industrial minerals of Belgium 21
The industrial minerals of the Netherlands 53
The industrial minerals of Luxembourg 66
South African fluorspar — penetrating export markets 69
Freights: Quiet and slow 81
Company News and Mineral Notes (83); Publications (89); Processing /Equipment (91); Diary (92); Fillers & Extenders (93); People (93); Prices 95, 96, 97; index to Advertisers 98

October 1981

Comment 7
World of Minerals 9
Minerals and Chemicals in Glass and Ceramics 23
Westerwald clays — meeting ceramic and refractory demands 34
The Palabora complex triumph over low grade ores 45
Tilcon — all rounders’ in the minerals industry 65
Industrial minerals of Bulgaria 73
Freights: Too many ships 83

MADENCİLİK, MART • HAZİRAN 1981 85
### November 1981

**Comment**

- World of Minerals: 7
- Industrial minerals of Japan: 9
- North American carbonates filling a market demand: 21
- Sodium exchanged bentonites in France: 53
- Zimbabwe mica — a profile of Mitmar: 59
- Asbestos — some hope in a still cloudy future: 69
- Freights: Slow and easy: 73

**Company News and Mineral Notes**

- People (77); Fillers and Extenders (77);
- Processing/Equipment (78); Diary (79);
- Publications (81); Prices 83,84,85;
- Index to Advertisers 86

**December 1981**

**Comment**

- World of Minerals: 7
- The industrial minerals of Scandinavia: 21
  - 1. Sweden: 21
  - 2. Norway: 45
  - 3. Denmark: 45
- Perlite — diversification the key to overall expansion: 55
- Freights: No improvement yet: 79
- Company News & Mineral Notes (81); Processing/Equipment (86); Publications (87); Diary (88); Fillers and Extenders (69); People (89); Prices 91, 92, 93; Index to Advertisers 94

### MINE VENTILATION SOCIETY OF SOUTH AFRICA 1981

#### 1. PAPERS

**GASES**

**Page**

- Symposium on «Mine Gases, Air Sampling and Gas Detection» (continued from Volume 33, 1980) Acute hazards of explosive gases, their detection and control Author: W. Holding (January) ................................................................. 1
- Concluding Address by W. S. Rapson (January) .............................................. 15
- Discussion Session (January) ............................................................................... 14
- Gas cleaning and cooling in sulphuric acid plants Author. J. P. Herselman (February) ........................................................................................................ 21
- ADU plant ventilation and fume extraction Author: LC. Coates (February) ... 28
- The mobile gas analysis laboratories of the Chamber of Mines of South Africa Author : Y. Haven and C. J. J. Hattingh (March) ............................. 51
HEAT AND TEMPERATURE

On-load automatic brush cleaning system for condenser tubes Author: G.H. Corlett (January) ......................................................... 16

The assessment and prediction of cooling plant performance Author: R. Hemp (May–June) .......................................................... 81-101

An investigation into the use of water-vapour refrigeration for cooling mine service water Author: R. Shone (July) .......................... 121

The performance of cooling coils Author: R. Ramsden (August–September) ................................................................. 145-163

The performance of direct-contract heat exchangers Authors: S. J. Bluhm (August, September) ........................................... 155-168

DUST

Gravel bed filters Author: J. Holden (February) ........................................... 36

Fabric filtration Author: D. Tuck (March) ............................................. 41

The consolidation of footwall dust in intake airways and roadways using calcium chloride Authors: H.H.E. Schroder, A.J.P. van Wyk and J. H. Quitlam (September) ........................................... 175

FANS

Energy economics of fans in remotely parallel operation Author: W.L. le Roux (October) ................................................................. 184

GENERAL

Development of a sealant for a brattice wail Author: E. R. Woods (March) 57

An appraisal of a filter unit for the production of potable water in stopes Author: FA Hawkins (April) ...................................................... 61

Extracts from the Annual Ventilation Report for Collieries

For the year ending September 1979 (April) ........................................... 67

For the year ending September 1980 (October) ...................................... 168

Ventilating a subsidence in coal Author: P.J. Yssel (April) ......................... 72

The sealing of basal leader reef intersections at President Brand Gold Mining Company Limited Author: A.L.J. de Vles (May) ......................... 99

Hints on operating and maintaining surface plant ventilation equipment Author: J.M.D. Bell (June) ......................................................... 118

A review of ventilation practice on South African collieries (Presidential address) Author: N. Thorp (November–December) ......................... 194-309

Ashfiling at Springfield Collieries Author: J.W. Jordaan (December) ........ 217

2. EXAMINATIONS

Notes for students — suggested answer Author: J.H. Louw (October) ... 186
3. MISCELLANEOUS

Abstracts .................................................................................................................. 19
25 years ago ........................................ 20, 40, 60, 76, 100, 120, 144, 160, 180, 192, 208-219
Call for papers ........................................................................................................ 59
Examination results ............................................................................................... 75
Obituaries: A. Whillier ......................................................................................... 161
J. A. Drummond .................................................................................................... 162
B. J. R. Botha ........................................................................................................ 179
President's Christmas Message ............................................................................ 193
Steenkoolmyn Tak. Versiag vir die Jaar 1980-1981 ........................................... 179

4. VISITS AND MEETINGS

Report on a visit to Pullenis Engineering. 24th March 1981 ............................. 178
Proceedings of the Annual General Meeting held on 24th June 1981 .............. 181-216

MINING ENGINEERING

Vol. 33 No. 1 January 1981

SPECIAL ISSUE — The Engineering Reality of OH Shale

29 An Oil Shale Perspective
Paul L. Russell

32 Current US Projects

39 A Range of Mining Techniques to Meet Site-Specific Conditions
Stephen Utter

43 Shale Oil Recovery Methods
Gary L. Baughman and Thomas A. Sladek

49 Environmental Issues: Still Clouded in Uncertainty
R. Michael Stanwood

52 The Government Plays a Prominent Role in Leasing and Developing Oil Shale
Daniel H. Israel

Technical Papers

57 Ambient Pollutant Concentrations in Two Underground Metal Mines Using Diesel Equipment

68 Materials of Construction for Modern Uranium Plants
John A. Riddle

71 TECHNICAL NOTE: Development of the Clean Pellet Fuel Process—A Progress Report
Thomas E. Ban, Eric Johnson, and William H. Marlowe

74 Federal Water Pollution Laws and Mining — A Summary
James R. Walpole

Vol. 33 No. 3 March 1981

Feature Articles

269 An Interview With 1981 SME-AIME President Alfred Weiss

88 MADENCİLİK, MART - HAZİRAN 1981
273 The Economics of Mechanical Raise Boring
N. E. Norman and James H. Dye

277 Design Factors for Heap Leaching Operations
George M. Potter

282 Fluidized Bed Combustion of High Sulfur Coal Proves Successful at Georgetown University
Robert L. Gamble and William J. McCloy

Technical Papers

291 Use of pH Control in Solvent Extraction Circuits

300 Biogeochemistry of Acid Mine Drainage and a Method to Control Acid Formation
R. L. P. Kleinmann, D. A. Crerar, and R. R. Pacelli

305 Bureau of Mines Research to Improve Underground Metal/Nonmetal Mining Technology
L. L Davis

312 Reconstructing Soils After Surface Mining of Prime Agricultural Land
I. J. Jansen

Vol. 33 No. 2 February 1981

Articles

135 Western Energy Eliminates Spoil Rehandle With Scraper Benching

137 Argentina’s Porphyr Copper Potential
Half Zantop

143 Engineering Fundamentals Series: Estimating Production and Costs for Electric Mine Shovels
Frank J. Hirner

167 Using the Modern Metric System
John Dasher

150 Technical Considerations for Siting Chemical Waste Disposal Facilities in Surface Mines
Daniel Threlfall and Mark J. Dowiak

Technical Papers

171 Economic Factors In Reclaiming Aggregate Mining Areas, Austin, Texas
L. E. Gamer

175 Development of Automatic Truck Control (ATC) John E. Miller

178 SAMARCO’s 396-km Pipeline—A Major Step In Iron Ore Transportation
Milton E. Jennings

183 Concentradora «Dona Aida» : Design Construction Costs and Break-in Operations
Adrian C. Dorenfeld

191 Discussion : Vacuum Filtration: Available Equipment and Recent Innovations
A. G. Moncrieff

192 Existence of an Induction Period In the Oxidation of Galena and Lead Sulfide In Water
Claudto Gutierrez

Vol. 33 No. 4 April 1981

Feature Articles

337 Selecting and Using Large Walking Draglines for Deeper Overburden Stripping
N. B. Pundan

382 Design and Development of the White Mesa Uranium Mill
C. Edwin Baker and Donald K. Sparling
386 Electronic Calculators Simplify Slurry Program
James H. Gill

388 Reducing Mining Costs Through Computer Technology
Michael E. Stickney

392 Technical Information Exchange was Focus of 110th AIME Annual Meeting

Technical Papers

401 Making iron Oxide Pellets for Direct Reduction : The Hyl Process Alzada Pellet Case
J. Federico Price and Jose E. Aparicio

407 Evaluation and Selection of Coals for Metallurgical Coke
R. F. Davis

410 Iron Ore Beneficiation — Key to Modern Steelmaking
James W. Guider

416 Environmental Control Technology for Contaminated Coal Refuse Drainage
E. M. Wewerka, M. Gottlieb, and C. Grua

421 Relationship of Sulfide Mineralization to Ophiolite Complexes in North America
Victor F. Hollister

Vol. 33 No. 5 May 1981

SPECIAL ISSUE
MINING ENGINEERING’S 1980 Annual Review

491 Exploration : Both a Boom and Bust Year

506 Mining : The Decade Begins With a Difficult Year

Surface Mining....................................508

Underground Mining.........................512
Solution Mining.................................516
Synthetic Fuels.................................517

527 Mineral Processing : Environment Economics, and Energy are Critical
Materials Handling...........................527
Crushing and Grinding.........................528
Concentration..................................528
Hydrometallurgy................................531
Agglomeration.................................533

539 Coal Persistent Problems Delay Boom Era
Legislation.......................................539
Surface Mining..................................540
Underground Mining.........................544
Coal Preparation...............................550

562 Another Disappointing Year for Industrial Minerals
Selected Data on Nonmetallic

Mineral Production.........................562
Agricultural Materials.......................562
Asbestos........................................565
Asphalt..........................................566
Barite............................................566
Bauxite and Alumina..........................567
Boron............................................570
Bromine.........................................571
Cement..........................................571
Chromite......................................572
Diatomite........................................574
Dimension Stone...............................574
Fluorspar.......................................575
Gemstones.....................................576
Graphite........................................576
Industrial Sand...............................577
Iodine.......................... 578
Kyanite.......................... 578
Lime.............................. 578
Lithium............................ 579
Magnesite........................ 580
Legislation and Regulations ... 518
Mine Safety and Health........ 520
Hydrology........................ 522
Ground Control.................... 524
Operating Controls................. 534
Mill Design........................ 536
Environmental Issues.............. 537
Mineral Processing
   Fundamentals.................... 538
Coal Utilization.................... 553
Health and Safety.................. 557
Transportation..................... 560
Manganese........................ 580
Mica............................... 580
Natural Abrasives............... 582
Nepheine Syenite............... 582
Olivine............................. 583
Perlite............................. 583
Power Plant Ash..................... 583
Pyrophyllite....................... 584
Rare Earths........................ 584
Salt................................ 584
Soda Ash........................... 585
Sodium Sulfate..................... 586
Specialty Clays.................... 586
Staurolite......................... 586
Strontium........................ 588
Structural Mineral Aggregates ... 588
Sulfur.............................. 589
Talc............................... 591
Titanium Minerals............... 591
Vermiculite....................... 592
Zeolites........................... 592
Zircon............................. 592

Vol. 33 No. 6 June 1981

Feature Articles
653 Siting and Design of Tailings Impoundments
   Steven G. Vick
658 Candelarie : Famous Silver
   Producer Reactivated After 100 Years
   Gordon U Steele
661 Strategic Mineral Dependence : Are We Addressing the Real Problem?
   Dr. Undsay Norman
664 Electrostatic Fogging Suppresses Respirable Rock Crusher Dust
666 Engineering Fundamentals Series : Vibrating Feeders Aid Bulk
   Rehandling for Stockpiling and Reclaim Work
   Albert Musschoot

Technical Papers
683 1981 Jackling Lecture —The Moving Targets of Mine Development
   Ray W. Balimer
686 Dodecyl Mercaptan : A Superior Collector for Sulfide Ores
   Douglas R. Shaw
693 Alumina From Oil Shale
   John Ward Smith
698 Analysis of Rock Bolting to Prevent Shear Movement In Fractured Ground
   Charles J. Haas
704 Coal Mine Roadway Stability in Relation to Lateral Tectonic Stress —
Western Canada
M. L Jeremic

709 Rosario Dominlcana's Cyanide Tailings Dam — Construction and Operation
Richard Addison and Ronald O. Cranor

Vol. 33 No. 7 July 1981

Feature Articles
787 Production Begins at Ertsberg Fast Copper Mine
L C. Acton and W. N. Key

798 Current Tailings Dam Design and Construction Methods
Earte J. Klohn

810 Blasting Techniques and Modern Explosives Allow More Efficient Coal Mining

815 New Mexico Program Introduces Native American Students to Mining Elizabeth Yost and John R. Sturgul

1981 Directory
825 «Who's Who in Mineral Engineering»
The 1981 Directory of the Society of Mining Engineers of AIME

Vol. 33 No. 8 August 1981

Feature Articles
1215 Engineering Fundamentals Series: Open - Pit and Underground Blasting Techniques

1220 A Water Rights Strategy for Mining Operations In the Western US
J. Craig Green

1223 Tailings Disposal at Quebec CartJer's Mount Wright Mine Walter Shuklin and Mark T. Olsen

1227 Feasibility of «Enhanced» Solution Mining at Searles Lake, California
James L. Giulianelli, Sam Carpenter Warren L. Dowler, and Roger V. Carlson

1232 Machinery Developments in British Coal Mines
A. Smithson

Technical Papers
1239 Coal and Coke Utilization As it Affects US Trade Relations (Or the Expanded Role of Coal In Wold Trade)
W. W. Mason

1243 Financial Outlook for Western United States Porphyry Copper Mines

1247 Alternatives to Conventional Cokemaking and Consuming Practices
F.J. Klessling

1252 Nitric - Sulfuric Leach Process Improvements
D.S. Davies, R.E. Lueders, R.A. Spitz, and T.C. Frankiewicz

1259 Nitric - Sulfuric Leach Process for Recovery of Copper From Concentrate
H.M. Brennecke, O. Bergmann, R.R. Ellefson, D.S. Davies, R.E. Lueders, and R.A. Spitz

1266 Subsurface Reflection Profiling Using Ground - Probing Radar
James C. Fowler

Vol. 33 No. 9 September 1981

Feature Articles
1323 Selecting centrifugal. Sturry Pumps to Resist Abrasive Wear
George Wilson

1327 Engineering Fundamentals Series: Extreme Care Needed When
Handling Explosives
1331 Carbon - in - Pulp Processing of Gold and Silver Ores : The Experts View the Problems
1336 Looking Back at the Metal Mines of Cornwall
Thomas A. Simpson
1340 Sulfur From Surface Ores
John M. Dale

Technical Papers
1347 Problems In Reclaiming Farmland in Illinois
Alten F. Grandt
1351 Chelating Agents as Collectors in Flotation : Oximes - Copper Minerals Systems
D.R. Nagarai and P. Somasundaran
1358 An Overview of Methods for Monitoring Diesel Pollutants in Underground Mines
David Carlson and John H. Johnson
1367 Proposed Requirements for Shielded Cables : An In - Mine Evaluation
R. H. King

Vol. 33 No. 10 October 1981

Feature Articles
1441 Carbon - in - Pulp Processing of Gold and Silver Ores : The Experts View the Problems
1445 Cost Analysis for the Design and Operation of Sublevel Open Sloping
P. K. Chatterjee and G. D. Just
1450 Slurry Pump Design Features
George Wilson
1454 Engineering Fundamentals Series : Dust Control for Coal Handling : Design Considerations and Solutions
Robert O'Brien and Henning E. Soderberg
1458 Rewards and Frustrations of Female Mining Engineers
Christy Z. Lueders

Technical Papers
1461 Predicting the Effect of Physical Conditions on Productivity In Underground Coal Mines
C. B. Manula and S. C. Suboleskl
1466 Computerized Maintenance System at the Carol Project
C. Jardine and D. Freudenrech
1471 Example of the Laboratory Characterization of Grinding Aids in the Wet Grinding of Ores
M. Katzer, R. Klimpel and J. Sewell
1476 Application of Geostatistics in a Coal Deposit
Y. C.Kim, F. Martino and I. K. Chopra
1482 The Dewatering of Fine Coat Refuse With A Continuous High Performance Belt Filter Press
Mark C. Fischer and Michael F. Schill

Vol. 33 No. 11 November 1981

SPECIAL ISSUE — Minicomputers In the Minerals Industry
1579 High - Powered Minicomputers Gain Mining Industry Acceptance
Louis C. Just and Graham A. Mathleson
1584 Minicomputer Applications for Today's Mining Problems
Richard A. Bideaux
1588 Minicomputer Software for the Minerals Industry
W. J. Douglas
1591 Available Software
1595 Selection Considerations — Using a Consultant

MADENCİLİK, MART - HAZİRAN 1981 93
ARTICLES

13 ENVIRONMENTAL REGULATORY IMPACT—AN OPERATOR’S PERSPECTIVE
Allan K. Booth

17 FISCAL SENSE FOR THE ’80s
Casper W. Weinberger

20 FOREIGN EXPLORATION PROS AND CONS
G. Arthur Barber

24 ENVIRONMENTAL SKETCH OF 1980
David C. Branand, John D. Austin, Larry Boggs and Douglas E. McAllister

31 MINERAL ALARM SOUNDED AT CONGRESSIONAL HEARINGS
James Belzer

35 SAFETY AND HEALTH IN 1980: BLUEPRINT FOR THE DECADE’S CHALLENGES
H. B. Johnson, H. Chaiet and M. Duffy

39 PUBLIC LANDS 1980 — AN UNBALANCED APPROACH TO LAND AND RESOURCE PLANNING
Keith R. Knoblock

47 SETTING THE STAGE FOR SEABED MINING
Jack M. Carpenter

52 MANUFACTURERS DIVISION LEGISLATIVE HIGHLIGHTS
Richard C. Holmquist and Ann M. Gosier

SPECIAL

16 INTERVIEW WITH SEN. MARK HATFIELD

48 COMMUNICATIONS WORKSHOP

Volume 67 Number 2 February 1981

ARTICLES

14 NOISE SUPRESSION IN TACONITE PLANTS
Robert M. Neii

19 DEVELOPMENT OF PITCHING SEAM FOR MAXIMUM PRODUCTIVITY
James A. Blount

23 REOPENING AN OPEN PIT MOLYBDENUM MINE — KITSAULT PROJECT
John C. Devitt

30 GOLD PRODUCTION FROM SOUTH AFRICA — PAST AND FUTURE
Robin A. Plumbridge

53 IMPROVING MINE VENTILATION BY THE DOUBLE-STOPPING METHOD
Duk-Won Park, Chang Ming Lin and Samuel Adepoju

58 TRENDS IN RECLAMATION TECHNOLOGY
James J. Kindel

SPECIAL

32 U.S. MUST DEVELOP A RESPONSIBLE ENERGY POLICY
Sen. Harrison Schmitt
ARTICLES

19 IMPACT BREAKERS IMPROVE PRODUCTIVITY
   Hendrik W. Seaney

21 UPGRADING OF LIGNITE TO ENHANCE FUEL VALUE
   Albert F. Baker, Robert E. McKeever, and Albert W. Deurbrouck

31 COPPER — BUILDING BLOCK OF MODERN SOCIETY
   George B. Munroe

44 METHANE CONTROL IN THE WARRIOR COAL FIELDS OF ALABAMA
   John W. Stevenson

47 HEAP LEACHING AND PILOT TESTING OF GOLD AND SILVER ORES
   Paul D. Chamberlin

53 COAL MINING ACTIVITIES IN SOUTH AFRICA
   V. C. Barnes

58 SENATE HEARINGS FOCUS ON MINERAL ISSUES

59 COAL CONVENTION PROGRAM

Volume 67 Number 4 April 1981

ARTICLES

17 SILVER AND GOLD RECOVERY FROM LOW - GRADE RESOURCES
   Gene E. McClelland and S. D. Hill

25 A CASE FOR ONE OR TWO - UNIT COAL MINES
   William P. Baiaz and James W. Boyd

29 WHITE PINE SEPARATES SAFETY AND MSHA COMPLIANCE FUNCTIONS
   Orville E. Anderson

35 TRANSPORTATION OF WESTERN COAL
   Norman M. Lorentzsen

38 STRATEGIC BUSINESS PLANNING IN THE MINING INDUSTRY
   Milton Stern

43 ENERGY EFFICIENCY CONSIDERATIONS IN IRON ORE PELLETIZING
   John S. Wakeman and Robert D. Frans

53 RIO BLANCO PROJECT
   J. B. Miller

57 QUICK CALCULATION OF CIRCULATING LOAD AND CLASSIFIER EFFICIENCY IN OPEN GRINDING CIRCUITS
   Adam Zenker

SPECIAL

Volume 67 Number 6 May 1981

ARTICLES

19 PRODUCTIVITY AND SAFETY IN U.S. BITUMINOUS COAL MINES
   Michael G. Zabetakis

22 MINE FINANCING IN CHANGING TIMES
   Edward L Vickers

27 NEW COAL EXPORT FACILITY AT BALTIMORE
   David D. Eyer

40 OPEN PIT MINING AT SYNCRUDE OIL SANDS PUNTS
   Bruce O. Regensburg

Volume 67 Number 6 June 1981

ARTICLES

17 SILVER AND GOLD RECOVERY FROM LOW - GRADE RESOURCES
   Gene E. McClelland and S. D. Hill

25 A CASE FOR ONE OR TWO - UNIT COAL MINES
   William P. Baiaz and James W. Boyd

29 WHITE PINE SEPARATES SAFETY AND MSHA COMPLIANCE FUNCTIONS
   Orville E. Anderson

35 TRANSPORTATION OF WESTERN COAL
   Norman M. Lorentzsen

38 STRATEGIC BUSINESS PLANNING IN THE MINING INDUSTRY
   Milton Stern

43 ENERGY EFFICIENCY CONSIDERATIONS IN IRON ORE PELLETIZING
   John S. Wakeman and Robert D. Frans

53 RIO BLANCO PROJECT
   J. B. Miller

57 QUICK CALCULATION OF CIRCULATING LOAD AND CLASSIFIER EFFICIENCY IN OPEN GRINDING CIRCUITS
   Adam Zenker

SPECIAL

Volume 67 Number 6 June 1981

ARTICLES

19 PRODUCTIVITY AND SAFETY IN U.S. BITUMINOUS COAL MINES
   Michael G. Zabetakis

22 MINE FINANCING IN CHANGING TIMES
   Edward L Vickers

27 NEW COAL EXPORT FACILITY AT BALTIMORE
   David D. Eyer

40 OPEN PIT MINING AT SYNCRUDE OIL SANDS PUNTS
   Bruce O. Regensburg

Volume 67 Number 6 June 1981

ARTICLES

19 PRODUCTIVITY AND SAFETY IN U.S. BITUMINOUS COAL MINES
   Michael G. Zabetakis

22 MINE FINANCING IN CHANGING TIMES
   Edward L Vickers

27 NEW COAL EXPORT FACILITY AT BALTIMORE
   David D. Eyer

40 OPEN PIT MINING AT SYNCRUDE OIL SANDS PUNTS
   Bruce O. Regensburg
43 MOBILE EQUIPMENT SYSTEMS FOR DRAGLINE PREBENCHING
    William L. Williams

SPECIAL

29 NATIONAL MINERAL POLICY

46 SANTINI INTRODUCES NATIONAL MINERAL SECURITY ACT

47 NATIONAL MINERAL SECURITY

Volume 67 Number 7 July 1981

ARTICLES

21 BUREAU OF MINES NEW STOPPING DESIGNS — AN UPDATE
    Edward D. Thimons and Fred N. Kissell

25 THE DECISION TO MAKE A MINING INVESTMENT IN A DEVELOPING COUNTRY: SOME CRITICAL ISSUES
    Raymond F. Mikeselew

29 ENTRY DEVELOPMENT FOR LONGWALL MINING
    Lynn W. Huntsman and Douglas C. Pearce

37 SEALING AN UNDERGROUND MINE IN PENNSYLVANIA
    Laurance A. Beck

48 A REVIEW OF VERTICAL CRATER RETREAT MINING
    Gordon K. Jorgenson

53 USE OF DOUBLE BELT FILTER PRESS IN COAL PROCESSING
    Thomas M. Lynberg

33 AMERICA NEEDS A NEW BEGINNING
    Secretary of the Interior James Watt

57 COAL CONVENTION REPORT

60 COAL CONVENTION RECEPTION

64 COAL CONVENTION SESSIONS
    Volume 67 Number 8 August 1981

ARTICLES

19 ACID RAIN — AN OVERVIEW
    Ralph M. Perhac

23 GOLD AND SILVER AS STORES OF VALUE
    Simon D. Strauss

31 PERFORMANCE OF NEW REFUSE SCALPER
    Christopher Staud and Lowell Hess

41 PREDICTING RETURN TO WORK AFTER MEDICAL REMOVAL REQUIRES B HEALTH STANDARDS
    Donald R. Lynam and Kenneth W. Nelson

45 A COMPARISON OF AMERICAN SAFETY PERFORMANCE TO OTHER COUNTRIES
    Robert L. Marovelli

52 ENGINEERING ASPECTS OF PRECIOUS METALS PLANT DESIGN
    Robert S. Shoemaker

56 CONTINUOUS HAULAGE AT LANCASHIRE NO. 24 MINE
    Paul T. Hatcher

SPECIAL

7 AMC RECLAIMATION TECHNOLOGY FIELD TRIP

36 SILVER STOCKPILE LEGISLATION COLLIDES WITH BUDGET RECONCILIATION

40 SPRING CREEK MINE DEDICATED BY NERCO

Volume 67 Number 9 September 1981

ARTICLES

23 REED GRASS AND SLURRY POND RECLAMATION
    Jack R. Nawrot Michael L. Fuson and Douglas M. Dawning

29 OPTIMIZING LONGWALL MOVE TIME
    Jon E. Pavlovtch and Charles J. Williamson
36 THE STRUCTURE OF TRANSPORTATION IN IMPROVING MARKETING OF UNITED STATES COAL EXPORTS
William W. Mason

40 CROSS - PIT CONVEYOR AND END - AROUND - CONVEYOR CONTINUOUS MINING SYSTEMS
K. L. Barden, T. I. Flies and P. J. Gilewicz

53 ENERGY RESOURCE UTILIZATION IN THE PACIFIC BASIN COUNTRIES
Irving Leibson

SPECIAL

31 SEN. HATCH INTRODUCES MINE SAFETY AND HEALTH REFORM ACT

33 INTERVIEW WITH SEN. ORRIN HATCH

45 1961 MINING CONVENTION

64 PRESIDENT WILL SEEK CLEAN AIR ACT EXTENSION

65 MAJOR DEFICIENCIES OF CLEAN AIR ACT DOCUMENTED IN NEW INDEPENDENT STUDY

Volume 67 Number 10 October 1981

ARTICLES

19 TRUCKS VERSUS HIGH -ANGLE CONVEYOR HAULAGE IN OPEN PIT MINES
Eart M. Frizzell, Andrew C. SimInerio and Ernst A. Mevissen

27 DEEP CUT REMOTE CONTROL MINING
Travis S. Wellman

81 RELEASE OF RADON - 222 FROM DEVELOPMENT DRILLING OF URANIUM
Lyda W. Hersloff

33 STRATEGIC PLANNING IN THE COAL INDUSTRY
Forrest E. Hill

39 GREENHOUSES WITHOUT WINDOWS
Carol R. Sheppard

46 FREEZE-TREATING FIVE MILLION TONS OF COAL
M. Allan Holtz and H. Bracken Cox

55 HEALTH EFFECTS OF RESPIRABLE COAL MINE DUST : COAL WORKERS' PNEUMOCONIOSIS
Joseph P. Costantino

SPECIAL

54 SENTINELS OF SAFEY WINNERS

Volume 67 Number 11 November 1981

ARTICLES

19 EXPORTS AND THE ANTITRUST LAWS : PROBLEMS AND SOLUTIONS
Kermit W. Almstedt

27 COMPUTERS — A PRACTICAL TOOL FOR MINE PLANNING AND OPERATION
Manouchehr Efamian

31 DEFENSE PRODUCTION ACT FUNDING RECEIVES BI - PARTISAN SUPPORT

57 ONE MINE’S APPROACH TO SAFETY TRAINING
J. R. Wilcox

65 EFFECTIVE OPERATION OF AN EXPORT DEVELOPMENT PLAN
William A. Walmsley

69 PROS AND CONS OF HYDROMETALURGY
Joe B. Rosenbaum

74 COST OF THE BLACK LUNG PROGRAM
George E. Newmeyer

98 MADENCİLİK, MART, HAZİRAN 1981
ARTICLES

12 CATERPILLAR MARKS HALF CENTURY OF PRODUCING DIESEL ENGINES

20 THE CEMENT INDUSTRY IN THE YEAR 2000
Richard E. Reuss

25 HEAVY MEDIA PROCESSING OF ILLINOIS NO. 5 SEAM COAL

Bob M. Grimm and J. Todd Lawton

31 STATUS OF THE COPPER INDUSTRY
Louis M. Perlman

34 OUTLOOK FOR THE DOMESTIC FERROALLOY INDUSTRY
George A. Watson

37 ROOF CONTROL AT REPUBLIC'S KITT MINE
Charles Burggraf

43 STATE OF THE U.S. URANIUM INDUSTRY
Eugene A. Lang

46 AMC SUPPORTS NATIONAL MINERAL SECURITY ACT AND USE OF DEFENSE PRODUCTION ACT SPECIAL

48 AMC MINING CONVENTION REPORT

56 CONVENTION SESSIONS

92 ANNUAL INDEX
Contents

Papers
Optimization of assay - cutoff orebodies
A. G. Royle A 55

Energy changes and stability in underground mining design applications of boundary element methods
B. H. G. Brady and E. T. Brown A 61

Pneumatic conveying equipment applied to mine shaft - sinking
J. E. Powell and K. Ruby A 69

Temporary support by rockbolts of large underground openings under difficult mining and geological conditions
B. Babcanskiand
Marian Zadrozy A 74

Modelling the future of mining groups
R. G. Coyle A 81

Application of pneumatic conveying techniques to mining Industry
R. D. Marcus et al. A 89

Discussions and contributions
Factors that affect underground rockbolt reinforcement systems design
I. W. Farmer and P. D. Shelton A 97

Tunnel boring in a deep South African gold mine
H. Burgess and J. G. Taylor A 97

Tunnelling by full-face machines in Carboniferous strata
N. S. M. Berry A 97

Gold : report of the fifth annual commodity meeting A122

Supply of gold in relation to demand
D. Potts

Gold exploration — past and future
R. Rice

The world gold - mining industry
F. D. Collender

Gold - mining methods
C. T. Shaw

Bougainville - were it not for gold
W. J. N. Davis and K. S. Karpin

Is gold forever?
D.A. Etheredge

Developments in the extraction of gold from Witwatersrand ores
I. Alberts. J. Levin and
P. A. Laxen

Mining finance in the gold market
J. R. C. Guy

A review of Industrial uses of gold
G. Tembe

Secondary recovery of gold
A. R. Attwood

Discussions and contributions
Mining graduate — future engineer or manager?
H. E. K. Allen A 54

Future of tin as a tonnage commodity
P. J. H. Rich A 162

Corrections A162

MINING MAGAZINE

January 1982

Funds for Tomorrow 3
Panorama 5

Gold Fields’ S.A. coal mine; Lithium project in Chile; New Quebec Cu producer; Archaeo - Metallurgy in israel; Earth Sciences museum in Arizona.
World Highlights

Orchard Volley Mine
A modern underground coal mining operation in Colorado is described, with particular reference to environmental factors.

Sydvaranger’s New Mill
A large grinding mill with peripheral motor has started up successfully at this Norwegian iron ore producer’s plant.

Flotation Machines
A review of current types of flotation equipment from mechanical cells to items utilising new ideas.

Nickel Resource Analysis
A survey, with discussion, of the Western World’s nickel producers.

Mining Survey
Introduction, 67; Analysis by size, 68; Current operations, 69; New Projects and expansions, 78.

Books
Tunnelling history and techniques; Manual for prospectors; Tailings dam construction.

Products and Processes
Aptitude test for dragline operators; Computer program for strip mine planning; New wheel loader; Vibrating feeders; Winning headframe design.

Briefly from Industry
Ural mine planners report…; Approval tests on conveyor belts; High-capacity French coal faces; Advantages of back-actors

Digest
Soviet methods for controlling open pit blasting dust; Outlook for manganese nodule mining — many technical and economic obstacles still have to be overcome.

February 1981

Panorama
Australia’s largest tin mine?; Kolar Gold Fields centenary; Falconbridge to undertake Kilembe feasibility studies; Further important South African gold mine plans; Rundle could be producing oil from shale by 1990.

World Highlights

Lanigan
Expansion plans at this Division of the Potash Corporation of Saskatchewan are well in hand. A ten-year development plan is described in detail.

Lodève
Operations at this new opencast/underground uranium mine in southern France with details of mining equipment and methods in use and a brief account of processing.

Exploration drill rigs
A detailed look at the wide variety of exploration drill rigs currently available and factors governing choice of equipment to get what is best suited to the job in hand.

Construction Equipment ’81
Britain’s most important exhibition of construction equipment offers much of interest to the mining engineer. Some of the more interesting exhibits are briefly previewed.

Books
Glossary of geology; Guide to the London Metal Exchange; Bibliography of U.S.S.R. resources; Limits to manual force.

Products and Processes
Digitised Landsat data — a useful aid to mineral exploration work.

Digest
Soviet methods for controlling open pit blasting dust; Outlook for manganese nodule mining — many technical and economic obstacles still have to be overcome.

MADENCİLİK, MART = HAZİRAN 1981 101
Go-ahead for Detour Lake gold mine; South Australian uranium deposit to be mined by in-situ leaching; Jordan's phosphate, potash and oil shale plans; Renewed activity at Lake MacLeod.

Operations at this major Australian source of manganese are described in detail, from mining and processing to land restoration.

A survey of the current models available of this extremely useful machine, with new trends examined.

A look at this country's copper industry—the largest in Europe.

Successful reclamation depends on control of metal dispersal.

The manganese mines of North Wales; Uranium evaluation and mining techniques; Correspondence.

Thin seam coal mining; Coal handling at Selby; Exploration drill rigs; Benefits from Split Set roof stabilisers; U. K. company gains major roof support orders.

Pilot scale tests at BRGM; The Lisakovskyl mining complex; Pilot scale ball mill grinding.

New South African fluorspar mine; Falconbridge Dominicana re-equipment; South Australian coal plans; Gag Island nickel project—outlook not promising.

Detailed technical description of the open pit/underground copper/cobalt producer in Zambia.

Copper mine, mill and smelter expansion plans over the next few years within this important Chilean group.

The design of bucket wheels for tar sand mining must take into account the harsh operating conditions.

Plans for mining an important iron ore deposit at Wadi Shattl.

Small electro-hydraulic drill rigs; Ceramic lined pipe; PGM exhaust catalysts for Japan; New bulldozer and wheel loader; Removing clay in coal waste processing.

Complex sulphide ores; Coal information sources and data bases; Introduction to rock mechanics.

Driving a 5% km ramp at Gaysky mine, U.S.S.R.; Use of undercharged blastholes in tunnelling.
Quot homines...

**Panorama** 359
Go-ahead for Alaskan moly mine; Beneath the sillat Premier diamond mine; Aluminium's role In New Zealand plans; Remote Canadian gold mine uses air transport.

World Highlights 367
Beneath the sillat Premier diamond mine; Aluminium's role In New Zealand plans; Remote Canadian gold mine uses air transport.

**PROMIS** 390
A computer-based Mine Production Management Information System developed by Anglo American Corp.'s Gold and Uranium Division in South Africa is described.

Initiating explosives 396
Some Interesting methods of instating blasting explosives have been developed in recent years.

Armico 404
Multi Arab government owned company channels oil revenue into mine projects.

Books 406
Uranium — a strategic source of energy; Blasting operations; Mining In Cornwall, 1850-1960.

**Products and Processes** 410
Export orders boost for U.K. longwall equipment; Giant wheel loader for tar sands; Microprocessor receiver facilitates geophysical surveys; New 4.5 yd³ hydraulic excavator.

Briefly from Industry 414
Recent Soviet hydraulic excavators for opencast mining; Use of vibrational ore feeders at a Caucasian molybdenum mine.

**Panorama** 431
Further moves towards development of Cerro Colorado, Panama; Equity — B.C.'s latest silver mine; Chanarcillo, Chile — a 'museum' makes money; World's largest gold mine; Tambao manganese deposit. Upper Volta.

World Highlights 439
Duvha 444
Operations at this huge opencast coal mine near Witbank, South Africa.

**Sierra Rutile** 458
West Africa's major new TiO₂ operation builds up output.

Manufacturers' Associations 469
A number of organisations assist in promoting mining equipment sales and exports.

Caraiba Metais 483
Brazil's first large copper mine recently inaugurated.

**Lab Separator** 489
Good correlation has been found between a lab separator and commercial tables.

Bergbau '81 490
A detailed look at what many exhibitors will be showing In Düsseldorf.

**High Moor** 513
A variety of trackless equipment is employed at a colliery in England.

Geothermal Energy in Iceland 543
How Iceland obtains one-third of its energy needs.

Books 549
The geology of the Western Cordillera of northern Peru; The world tin industry — supply and demand.

**Products and Processes** 551
Exploration with versatile rigs; Min-Sys information system; Handling/crushing plant for Australia.
Briefly from Industry 557
Digest 564

July 1981

Who needs consultants? 3
Panorama
Pinson : new open pit gold mine in Nevada; Mantos Blancos, Chilean Cu mine, stars up new sulphide flotation plant; U.S.S.R. coal industry production plans; Solution mining method to be used for Wyoming trona ore.

World Highlights 13
Venezuelan iron ore 18
The mines of C.V.G. Ferrominera Orinoco produced 16 Mt in 1980. Their operations are described, including the use of an effective truck/train loading system.

Cornwall Tin 28
New mineral processing equipment has brought benefits to Cornwall’s tin mines.

Richards Bay 30
South Africa’s major coal export terminal.

C.V.G. 34
Regional development in the Guayana region of eastern Venezuela based on natural resources: iron ore, steel, aluminium, hydropower and, in the future, bauxite.

Book 42
The world of diamonds; Mining and regional development; Rock bolting — a practical handbook.

Products and Processes 46
Brown coal expansions in Poland; Wear resistant pipelines; Opencast equipment demand Cable Belt at prince of Wales; Successful coal screening; Crushing plant for Sri Lanka; Simulated batch filtration.

Briefly from Industry 53
Digest 58
Range of Soviet mining drill rigs, Optimising blasthole layout in burn cuts.

August 1981

Environmental exaggerations 71
Panorama 73
Progress on sub-vertical shafts at Mufulira, Zambia; Australia’s Condor oil shale deposit may be first; The Farallon Negro deposits, Argentina; The Aga Khan — an Australian emerald mine.

World Highlights 79
S. A. Chrome 84
Chromite mining and ferro-chrome production by Samancor in South Africa.

Crushers 94
A summary of the types of crushing equipment used in the mining industry, with emphasis on new concepts and new machines.

Mining the Red Sea 114
Successful completion of pre-pilot trial mining of metalliferous mud at a depth of 2,000 m is to be followed by a pilot scale test. Published reports on the project are summarised.

Molymet 126
Over 7% of the Western World’s molybdenum is handled by this Chilean metallurgical plant with valuable by-product rhenium.

Books 123
World mineral trends and U.S. supply problems; Gold and silver cyanidation plant practice — Vol. II; Most splendid of men.

Products and Processes 130
Seize resistant bearings in mining conveyors.

104 MADENCİUK, MART - HAZİRAN 1981
Briefly from Industry

Digest

Blueprints for Soviet mining machinery; Intensification of stripping operations—the Russian way.

September 1981

...With Safety

Panorama

Amax Phosphate’s «Big 4» expansion; Progress at Jwaneng diamond mine; Welsh gold mining—small but romantic; A bauxite project in Ghana; More diamonds—news from Guinea and Western Australia; Sydvaranger starts new mill.

World Highlights

Chilean Nitrate Mining

What may be the world’s most widespread mine wins mineral wealth from the world’s most arid desert.

Large Scale Underground Mining

The author explains why there are few large-scale underground mines as compared with open pits, compares costs and proposes a new large-scale underground mining method.

Mobile Mining Equipment

A summary of results from a worldwide survey of underground mobile equipment, including information and comment from mine managements.

Iberian Iron Ore

The industry’s role in the national economy, with a look at future prospects.

Books

Ore microscopy and ore petrography; Reflections on an era; Of minerals and man.

Products and Processes

Bergbau 81— how it went; Air conditioning system in F.R.G. mine; Mining complex near the North Pole; New 9m³ tractor shovel; Tunnel boring at President Steyn; Growing trees underground.

Detailed from Industry

Digest

New abrasion-resistant materials; Shaft sinking by freezing in Poland; Trackless mining at F.R.G. colliery.

October 1981

Readers’ comments

Panorama

Coal in Czech energy plans; Quebec’s newest gold producer; Indonesian tin dredge overcomes bearing trouble; Expansion on course at Avino’s Mexican silver mine; First production due this month from Ranger.

World Highlights

Stigfngfleet

A.U.K. shaft sinking record was set recently at this site, one of the mines in the major Selby coal project.

Remote Sensing the Literature

Collecting distributed data for databases is expensive; an assessment of the extent to which online searching of bibliographic services can cut this cost is presented.

The Role of Banks

Banks have an increasingly important role to play in mining projects. The article discusses ways they can help with funding.

Ore Reserve Assessments

In planning a sampling programme, it is imperative to be aware of all factors which might influence the reliability of the data derived from it.

Asian Mining 81

Papers to be presented and who will
be showing equipment at this important mining event.

Products and Processes 313
Concreting of underground roadways at Climax, U.S.A.: Mineral processing equipment, Three-phase winder drives
Briefly from Industry 320

Books 324
Wear in slurry pipelines; Coal in Britain; The world aluminium industry

Digest
Planning a new underground mine at Mittersill, Austria; Use of a minicomputer for telemetry at Lens, France.

November 1981

Mining in France 337
Panorama 341
Beisa — the new O.F.S. uranium/gold producer; A. mine financing milestone; Elura shaft is multi purpose, etc.
World Highlights 349
Anglade 356
Tungsten mining at Salau in the Pyrenees mountains.
PUK's mining activity 365
Bauxite and fluorspar mining by this organisation.
Charbonnages de France 375
The coal mining industry in France tackles a variety of conditions.
IMETAL/Penarroya 386
A summary of activities of this multinational company.
Drilling and roof bolting 389
Methods and rigs employed at iron ore and uranium mines.

December 1981

After Cancun, what? 447
Panorama 449
Thailand's largest underground mine; Fraser — a new nickel mine in Ontario; BHP, Australia, outlines ambitious coal plans
World Highlights 455
Mantos Blancos 458
After mining, leaching and smelting oxide copper ore for twenty years, Mantos Blancos has this year added a flotation plant for sulphides found in depth.
Norwegian quarry 472
The possibility of large-scale mining of anorthosite in Norway for export markets is considered.
Conveyor belts 475
Belting itself is a major cost item in a conveyor operation, as is its failure. Investigations aimed at improved availability are described.
Appalachian coal 484
Mining methods and equipment for steep slopes and mountain tops.

Mines de Potasse d'Alsace 395
Potash mining and processing in France
Sacilor 397
Mining iron ore in the Lorraine basin.
BRGM and Cerchar 401, 402
Investment and research
Consultants and manufacturers 404
Books 431
La fracturation des roches; A concise history of mining, etc.
Briefly from Industry 432
Digest 437
Energy consumption in non-ferrous metals production.
Synfuels
A review of the current status of methods and projects in the «synthetic» fuels industry.

Books
Australian mining, minerals and oil, 1981; Mineral processing, volume 1, fundamentals — comminution, sizing and classification.

Products and Processes
Dry mix shotcreting — recent developments and tests; Japanese 120 t mechanical drive dump truck; Mine gas as source of energy, Shifting difficult tin-bearing ore; Trials of bidirectional coal auger.

Briefly from Industry
New Soviet ventilator for open pits; Filter presses lower moisture content of pipeline-transported Cu concentrates.

WORLD COAL

January 1981 / Volume 1, Number 1

FEATURES
Face Ends Symposium and Exhibition by J.R. Chadwick 18
South Africa's Matla Mining Complex by P. Doerell 20
New Development In Shaft Signalling by J.R. Chadwick 23
Turkey's Brown Coal Potential by M. Çetinçelik and E. Tuncali 24
West Virginia's First Hydraulic Shovel by S.J. Schneiderman 26

February 1981 / Volume 1, Number 2

FEATURES
INTERNATIONAL GUIDE 19
HYDRAULIC EXCAVATORS

Global Seaborne Coal Trade to Grow by P.E. Doerell 27
«On-the-Miner» Roof Bolting in Australia by J. Sleeman 29

March/April 1981 / Volume 7, Number 3

FEATURES
Exxon's Coal Liquefaction Plant by S.J. Schneiderman 40
Coal Technology Show by S.J. Schneiderman 43
Pressure Gasification in Czechoslovakia 47
Coal Technology Europe 49
Zimbabwe's Cool Reserves by J.R. Chadwick 50
Thin Seam Mining by S.J. Schneiderman 52
Thick Seam Mining In Czechoslovakia by Z. Matusek, J. Dlouhy, Z. Bauch, & P. Korczynski 56
Coal Preparation In China by Chen Zhao-ning 58

May/June 1981 / Volume 7, Number 4

FEATURES
Semi-mobile Crushers by W. Rixen & K.J. Benecke 52
Mining Vertical Seams in France by S.J. Schneiderman 56

MADENCİLİK, MART - HAZİRAN 1981 107
Mexican Coal Use by H. De Luna, F. Elizondo, & R. Rodriguez 58
Bergbau ’81 68
Australia’s New Coal Mine 7
Coal Prices Going Up by P.E. Doerell 74
Zimbabwe Mine Keeps Growing by J.R. Chadwick 86
Stabilizing Preparation Plant Tailings by L.I.D. Llewellyn 90
Hydraulic Rotary Percussion Drilling by T. Sealy 104
Soviet Surface Mining by T. Sealy 104
Brown Coal Prep by H. Bleckmann, W. Sitte, & H. Kellerwessel 106
Monitoring Methane Gas Explosions 109

July/August 1981 / Volume 7, Numbers 5

FEATURES
Coal’s Strong Future In Canada by G.T. Page 40
Canadian Coal Reserves by Dr. M.L. Jeremic 42
Coal Transportation by W. Van Hinte 45
BC Coal’s Sparwood Operations by S.J. Schneiderman 48
Expansion Underway at Fording by S.J. Schneiderman 52
Prairies’ Mine Mouth Power Plants by S.J. Schneiderman 58
Synfuels in Canada by P.J. Read 61
Developments In Northeast British Columbia by G. Kedgley 64
Coal Exports and Markets by J.A. Aylsworth & R.P. Mulvihill 67
Mining In Eastern Canada by A.R. MacLean 70
Coal Preparation Practices by W. Irwin 74

September/October 1981 / Volume 7, Number 6

FEATURES
Modular Coal Preparation Plants by R.E. Dunkle & J. Luna 41
Coal Tech Europe ’81 by P. Doerell 44
Bergbau ’81 by R.J. Wyllie 56
El Cerrejon Moving Ahead by S.J. Schneiderman 58
German Creek Coal Mine by L.A. Lyons 66
1981 Coal Trade Summit by S.J. Schneiderman 68
Coal Preparation Congress Preview 70

November/December 1981 / Volume 7, Number 7

NATIONAL REVIEWS
United States : Golden Opportunity by R.E. Samples 84
Poland’s Labor Problems Reduce Production by M. Swiss 87
Production Down in Soviet Union but Increases Forcast 88
China’s Coal Industry Being Adjusted by Bai Xingji 90
Canada’s Coal Industry Continues to Grow
by J.A. Aylsworth 92

South Africa’s Coal Industry Keep Growing 94

Coal Most Secure Energy for West Germany
by Dr. K. Bunda 96

Production Up In the United Kingdom 98

Coal Industry Expands in Australia
by L.A. Lyons 100

FEATURES

Coal Trade Up in 1980
by G. Markon 43

World Coal Production 50

Exporter’s Directory 59

Recent Trends in Coal Preparation
by R.E. Zimmerman 78

1981 Feature Index 108