Süreli Yayınlar

Mining Magazine

JANUARY 1989

4 Panorama

Production commences at Namew Lake, Canada; Hartley platinum project, Zimbabwe; Björkdal, a Swedish gold project, inaugurated; Minas de Passagem gold mine complex, Brazil; Renewed interest in Senegalese ilmenite.

- 18 Paradise Peak FMC Gold Co.'s low cost gold-silver open pit operation in Nevada is set to expand production. Andy Shaw gives the details.
- 24 Continuous Bulk Transportation Syd Altimas reviews the latest trends in the movement of material from open pit to customer.
- 31 Ancient Mines in Rajasthan Lynn Willies describes lead-zinc-silver mining operations carried out 2,000 or more years ago in north-western India.
- 37 Risk Factors The author discusses market regulators as a risk factor in mining projects, with specific reference to tin.
- 41 Mining Survey The Western World's metal mines: a survey by Mining Journal Research Services. Introduction, 41; Analysis by size, 42; Current operations, 43.

FEBRUARY 1989

- 80 Panorama Mining profits restored in Spain; Planning and permits complete for Randsburg placer gold deposit, California; Phosphate mining in Tunisia; Brown coal into oil - Japan and Australia look at 2000; Prospects for platinum to 1993.
- 96 Syncrude Canada How this major Canadian oil sands producer overcame haul truck problems resulting from very harsh operating conditions.

- 103 Finnminers The Finns have had to contend with small, complex orebodies and in the process have built up considerable expertise. Andrew Gardiner describes some of their latest equipment.
- 116 Lead-Zinc in mid-Wales George Hall describes the last 100 years of mining around Pontrhydygroes, Dyfed, where lead was mined but zinc often left in the ground.
- 124 Abrasion in Pipes Helen Bunn presents some results of comparative wear tests.
- 128 Minerals In Malawi Derek Ottley considers the potential for mineral resource development.

MARCH 1989

- 164 Panorama Mining in Southern Africa - the way forward; Colombian mining: a growth industry; Plans to exploit ilmenite sands in Madagascar; Virgin Island copper mine mystery.
- 180 Rubiales Revisited Since the April 1980 article in *Mining Magazine* describing the VCR method used at this Spanish Pb/Zn mine, the stoping method has changed. Details of the new system are given.
- 192 Deep Mine Ventilation Hans de Ruiter describes the planning and installation of a ventilation system for Lac Minerals' Macassa Division, and gives details of the results achieved.
- 203 Mine Locomotives Geoff Pearse discusses the factors to consider in choosing locomotives for mine haulage and describes some of the models available.
- 214 Vouters Colliery This French coal mine works steep seams which vary between 70° and the vertical, using a method akin to cut-and-fill.

APRIL 1989

249 Panorama

Update on Galmloy zinc project, Ireland; Asarco's copper modernization plans: New lease of life for Guyana bauxite; Guided tour of Cornwall's historic mines.

262 Tara

Introduction of new equipment underground at Europe's largest zinc-lead mine in Ireland has had a major impact on productivity.

Chromite and Ferrochrome 273

A review of current production worldwide coupled with an examination of the major market outlets.

291 Excavators

Peter Grimshaw reviews the major changes that have taken place in the excavator manufacturing industry and describes the latest models available.

MAY 1989

343 Panorama

Aberfoyle's Hellyer operation officially opened; MIRO looks to 1992; Exploration work at Recsk, Hungary; Plans for Poland's sulphur mines; Worldwide mining and tunnelling equipment market - a report.

358 **Guyana's Mineral Potential**

Mining Journal's Andy Shaw reviews Guyana's existing mining industry and looks at the potential for future development.

- **Drilling with Hydraulic Jumbos** 367 Drill and blast is still the dominant method for breaking ground in metal mines. Some recent results using hydraulic drills are given.
- 375 EC Coal Mining

In output and numbers employed, the coal in-

JANUARY 1989

- 13 Rare earths: Their mining, processing, and growing industrial usage. S. Vijavan, A.J. Melnyk, R.D. Singh, and K. Nuttall
- Copper prices: History not necessarily 19 precursor to future. . Simon D. Strauss.
- **Operational and geotechnical constraints** 21 to coal mining in Alaska's Interior Patrick Corser and Mitch Usibelli

dustry of the European Community is smaller than it was, but productivity is improving.

401 Technical Computing

Major influences are changing the nature of technical computing as applied to mining. The authors look forward to the challenges of the 1990s.

423 Mining Survey

A review of the Western World's non-gold mine development projects.

JUNE 1989

461 Panorama

Big Bell - a major Western Australian gold project; U.S. work on metal recovery from complex sulphides; New "clean coal" power generation plant for U.K.; Registered gold output up 57.6% in Brazil; Chilean copper plans.

476 Southern Cross Mining

Open pit gold mining and heap leaching at Konongo / Obenemase in Ghana - a new mine inaugurated in January this year.

486 Wiluna and Horseshoe

Two Western Australian gold mines reported on by David Bird, editor of Mining Journal's International Gold Mining Newsletter.

497 Mining Software

Availability of mining software has been particularly important for Australia's growing gold mining industry. The latest developments are reviewed.

502 Mine Shaft Hoists

Hoists are the most important machines at an underground mine. Geoff Pearse reports on the latest types available.

Gold Projects 507

Mining Journal Research Services' listing of current gold mining projects.

Mining Engineering

- Rock mechanics program helps improve 24 trona recovery at Stauffer's Big Island mine In Wyoming J.F. T. Agapito and Ft. V. Hunter.
- Leaching characteristics of selected super-33 gene copper ores S.S.Cook and S.E. Paulson
- 40 A new development in microcomputer software for mine ventilation planning involving the installation of fans M.S.J. O'Leary and M.J.MacPherson

- 45 Determining the effects of new technology on room-and-pillar productivity *C.J.Johnson and C.J.Bise*
- 48 DISCUSSION: Degradation process in coal slurry pipelines *M.G.Ay at and B.C.Scoot*

FEBRUARY 1989

- 87 Montana Tunnels start-up efficiencies improved, *Michael L Clark, Thomas J. Weitz, Willianm* ft Banning, Daniel J. Turk, and John Paterson.
- 92 Tax incentives are key to survival of Canadian mineral exploration *Kenneth A. Grace*
- 95 Influence of blasting techniques on open pit economics Raj K. Singhal, H.G. Naidu, and S.P. Singh
- 99 Fast track construction at Asamera's Cannon mine a case study Donald C. Moore
- 103 Nordberg MP1000 versus 2 m (7 ft) SHD Symons cone crusher: Performance comparison V.K. Karra
- 106 Rock index properties for geoengineering in underground development *J.E.ORourke*
- 110 Dynamic fractured flow simulation model A.S.C. Owili-Eger
- 114 Innovative shaft lining method ft *N. Torbin and R.F. Kovar*
- 118 DISCUSSION: Degradation process in coal slurry pipelines *M.G. Ay at and B.C. Scott*

MARCH 1989

- 158 Stress control methods help to optimize underground mine design Shosie Serata and Mark Lawshe
- 161 Miners' tunneling efforts nearly end Civil War nine months sooner Bob Snashall
- 163 New developments help characterize and improve the flow of bulk granular solids. David S. Dick and John W. Carson
- 166 TECHNOLOGY NEWS: Control of mine equipment integrated by linked PLCs
- 168 TECHNOLOGY NEWS: Bulk pumped water gels cut blasting costs at Canadian mines

- 169 Geochemica! exploration guidelines to disseminated gold deposits *LW.Ashton*
- 175 Production monitoring scheme for continuous mining sections *J.L. Kohler and D.B. Gentzler*
- 180 DISCUSSION: Selection of mine hoist ropes L Adler
- 181 DISCUSSION: In situ leaching of disseminated gold deposits - geological factors *J.G. Wargo*
- 182 DISCUSSION: Control of coal mine bursts K.Y. Haramy, J.P. McDonnell, and LA. Beckett
- 183 DISCUSSION: In-the-wall haulage for ?pen pit mining W.A. Hustrulid, B. Seegmiller, and O. Stephansson

APRIL 1989

- 221 Operating practices at the Ljping gold mine, cornerstone of Echo Bay mines Ltd. *Cherly Lee Vaatter*
- 227 Gold mineralization in porphyry copper deposits discussed *J. David Lowell*
- 232 Horace Tabor: Colorado's mining colussus Duane A. Smith
- 234 Turkey operates its first overland conveyor with horizontal curves *M.* Sagheer
- 236 TECHNOLOGY NEWS: Proper planning saves limestone project from hurricane
- 239 Crushing and grinding at Amax's Sleeper gold mine *T.J. DeMull and B.A. Boster*
- 245 Detection of abandoned coal mine workings and underground voids by microgravity *D. Butler*
- 247 DISCUSSION: Classification effects in wet ball milling circuits *R.E. Mclvor*
- 249 DISCUSSION: Quality requirements for industrial minerals used in drilling fluids *R.L. Garrett*

MAY 1989

- 301 EXPLORATION
- 323 MINING
- 334 COAL
- 341 PROCESSING

JUNE 1989

- 339 1988 INDUSTRIAL MINERALS REVIEW
- 428 Montana Talc details its entry into the talc business *F. W. Perejar*
- 430 Asarco: Plant expansions and modernization continue amidst company restructuring *Tim O'Neil*
- 435 Gold processing examined at Las Vegas SME meeting Lane White
- 440 Laboratory heap leach testing: How smalland large-scale tests compare *Russell B. Dix*
- 455 1988 Jackling Lecture: Quality where it counts *C. Allen Bom*
- 457 Beneficiation of barite: A review of processing studies at CANMET *P.R.A. Andrews and R.K. Collings*
- 462 Efficient use of additives to improve pneumatically emplaced backfill strength *M.J. Carlson and L W. Saperstein*

Industrial Minerals

JANUARY 1989

- 25 Olivine Volume is the key to success
- 37 Financing mining companies
- 41 Health regulations Let realism replace" prejudice

FEBRUARY 1989

- 25 Chromite Ladles refine demand48 Drilling in the US Gulf Cautious optimism for muddy future
- 65 Moving the mine Twenty-five years on

MARCH 1989

- 21 Iron oxide pigments Construction adds a touch of colour
- 43 Synthetic silicas & silicon chemicals Natural consumers but sophisticated rivals
- 59 Mexican industrial minerals/Fluourspar and fluorine markets Abstracts & biographe es
- 66 BS 5750: Its relevance to the mineral processing industries
- 68 Transportation within a single European Market

APRIL 1989

- 19 US Pacific Northwest An outpost of industrial mineral wealth
- 57 Fine grinding A review
- 74 Industrial Minerals Can we live without them?

MAY 1989

- 23 Belgium An industry profile
- 42 Manganese EMD the power in the market
- 61 Guyana's industrial minerals Gold to spur investment?

JUNE 1989

- 19 Eneergy in N. America The power behind Industrial minerals
- 41 Pyrites as a sulphur source Down but not out

Institution of Mining and Metallurgy

JANUARY 1989

- Al Metals 2000 presentations at *March, 1989, conference*
- A31 Wankie the Zimbabwe coal mine O.K. Bwerinofa and R.G. Brennen
- A43 Block caving at El Teniente mine, Chile *R. Kvapil et al.*
- A57 Some ventilation problems in the hot Campiano mine, Tuscany, Italy *P. Berry, P. Piga and and O. Sammarco*
- A63 Technical note Recent developments at Winsford salt mine, Cheshire, England *W.A. Longley-Cook*
- A68 Discussion Recent developments at Winsford salt mine, Cheshire, England *W.A. Longley-Cook*
- A68 Block caving at El Teniente mine, Chile *R. Kvapil et al.*
- A68 Mine costing *K.C.G. Heath*

FEBRUARY 1989

- B1 Structural controls of Monterroso and other gold deposits In northwest Spain - fractures, jogs and hot jogs *R. Jahoda, J.R. Andrews and R.P. Foster*
- B7 Geological setting of gold mineralization in the Republic of Ireland *P. McArdle*
- B13 Petrography of CabaçaM gold copper deposit, Mato Grosso State, Brazil *C.M.L Marchetto*
- B18 Petrological encoding of cumulates *C.I. Mathison*
- B24 Technical notes Results of geochemical soil survey in Ramagiri goldfield, Andhra Pradesh, India K. Surya Prakash Rao, R.S.N. Sastry and S. V. Raju

- B27 U-, Th- and REE-bearing accessory minerals in a high heat production leucogranite within the Galway Granite, western Ireland *M. Feely, E. McCabe and C. T. Williams*
- B32 Banded iron formation in highgrade gneisses in northern China and implications for early crustal growth *Zhai Ming-guo and B.F. Windley*
- B34 Gamma radiometric survey of Jamaica G.C. Lalor, JM Miller, H. Robotham and P.R. Simpson
- **B38** Report of thirteenth annual commodity meeting: Gold, with emphasis on recent exploration

MARCH 1989

- CI Incorporating state of the art models into a mineral processing plant simulator *J.A. Herbst, G. D. Schena and LS. Fu*
- C12 Use of inert plarticles for floe dewatering in hydrocyclones - physico-chemical principles O.A. White
- C17 Dephosphorization of manganese ore by high-intensity magnetic separation and roast-leaching *Quanyuan Song, Yuxue Zhao and Jiaji Zhu*
- C21 Reaction kinetics for leaching of iron oxides in boehmitic bauxite by hydrochloric acid Y. Paspaliaris, Y. Yiouli and G. Patermarakis
- C26 Electrochemical behaviour of carrollite (Cu-C02S4) in aqueous buffer solutions L/C *Witika and W.C. Lombe*
- C33 Possible route for chromium production from ferrochromium powder, 1: nitriding *A. W. Kirby and D.J. Fray*
- C41 Study of the reaction of sodium oxide with cuprous and cupric chlorides *C.A. Pickles*
- C46 Spiral separation: theory and simulation AR *Holland-Batt*
- C61 Activities of manganese and carbon in the liquid system Fe-Mn-C *W. Dresler*

- C68 Measurement and simulation of sedimentation behaviour of concentrated polydisperse suspensions *R.A. Williams and W.P.K. Amarasinghe*
- C83 Technical notes Effect of oxygen enrichment on elimination of As, Sb and Bi during copper converting *P.C. Chaubal*
- C84 Recovery of gold from a gold-thiourea-loaded ion exchanger *A.B. Bjerre and E. Sorensen*

MAY-AUGUST 1989

- A73 Comparison of two models for subaerial deposition of mine tailings slurry D. J. Williams and P.H. Morris
- A78 Performance criteria for mechanized mining equipment H. Wagner and J. Oberholzer
- A85 Technical computerization at Tara Mines, Ltd., Navan, Ireland J.H. Ashton and G. Harte
- A98 Drill, blast, load and haul practices at Rossing mine, Namibia D.A. Sandy
- A105 Selection, development and testing of integrated truck-shovel management system V. Srajer, L Hick and P.ML. Walshe
- A113 Development of shaft steelwork as applied to deep, circular shafts: design and installation aspects *W. B. Glenday*

International Journal of Mineral Processing

JANUARY 1989

- 1 Stability of the arhylxanthate ion as a function of pH: modelling and comparison with the ethylxanthate ion *P. de Donato, J.M. Cases, M. Kongolo, A. Cartier and J.L Rival!*
- 17 Influence of particle shape on liberation *U. Preti, G. Ferrara and T.P. Meloy*
- 29 Flotation of cerussite with a synthetic chelating collector A.M. Marabini, M. Barbaro and B. Passariello

M AY-AUGUST 1989

- B83 Tectonic features and aspects of mineralization in the region north of Tibet (part of Qinghai, Gansu and Xinjian Provinces), China *Q.M. Wang*
- B91 The gold pathfinder elements As, Sb and Bi-their distribution and significance in the southwest Highlands of Scotland *O.A. Plant et ai*
- B102 Gold mineralization in relation to the evolution of extensional volcano-sedimentary basins in the Scottish Dalradian and Abitibi belt, Canada *P.R. Simpson et al.*
- B118 Stable isotope study of Akpatakpa lode, Abakaliki District, Benue Trough, Nigeria *A. Changkakoti et al.*
- B123 Reliability of geochemical analyses: recent experiences *C. Reimann*
- B130 Behaviour of gold and other heavy minerals in drainage sediments: some implications for exploration geochemical surveys *W. K. Fletcher and S.J. Day*
- B137 Discussion Prospecting in areas of glaciated terrain -1988
- B147 Technical note Crustal accretion and mineralization in western Junggar, Xinjiang Province, northwest China *M.B. Allen et al.*
- 41 Calculation of energy required for grinding in a ball mill *N.M. Magdalinovic*
- 47 An experimental study of the settling velocities of single particles in non-Newtonian fluids *P.A. Reynolds, and T.E.R. Jones*
- 79 Purification of an ammoniacal zinc leach liquor using a rotating zinc disc after copper solvent extraction *G. Roy Chaudhury and I.N. Bhattacharya*
- 87 X-ray photoelectron spectroscopy (XPS) studies of potassium amly xanthate (KAX)

adsorption on precipitated PbS related to galena flotation. **P.** W. Page and LB. Hazell

- 101 Macromolecular organic depressants in sulphide flotation-a review, 1 Principles, types and applications *R.J. Pugh*
- 131 Macromolecular organic depressants in sulphide flotation-a review, 2. Theoretical analysis of the forces involved In the depressant action *R.J. Pugh*
- 147 Short Notes Sulphation-roasting of low-grade manganese ores-optimisation by factorial design *P.K. Sahoo and K.S. Rao*
- 153 Workshop on the flotation-related surface chemistry of sulfide minerals *G. W. Walker, P.E. Richardson* **and** *A.N. Buckley*

MARCH 1989

- 159 Restricted stratified random sampling I. W. Saunders and G.K. Robinson
- 167 Locking profile of diamond-shaped particles of all aspect ratios *T.P. MeloyandN.N. Clark*
- 175 A simplified variogram method for determining the estimation error variance in sampling from a continuous stream *I.W. Saunders, G.K. Robinson, T. Lwin and R.J. Holmes*
- 199 The significance of bubble/particle contact time during collision in the analysis of flotation phenomena Y. Ye and J.D. Miller
- 221 Induction-time measurements at a particle bed Y. Ye, S.M. Khandrika and J.D. Miller
- 241 Iron removal during oxidative, acid pressure leaching of a zinc sulphide concentrate *F.M. Doyle, H. Arauco and L.M. Feng*
- 261 Anionic flotation of magnesium carbonates by modifiers K.A. Mat is and G.P. Gallios
- The relationship between flotation and adhesion of galena particles to the air-solution interface
 Nishkov and R.J. Pugh
- 289 Asymmetrical particles-their volume locking profile *T.P. Meloy and J.W. van Egmond*

- 297 Comparison of the performance of watersealed and commercial hydrocyclones *Luo Qian, Deng Changlie, Xu Jirun, Yu Lixin and XJong Guangai*
- **311** *Technical Note* Canadian silica resources for glass and foundry sand production: Processing studies at CANMET

P.R.A. Andrews and R.K. Collings

CIM Bulletin

JANUARY 1989

- 31 Maintaining a successful loss prevention Programm; *G.R. Larocque*
- 34 The use of computer blast simulations to improve blast quality; *R.F. Favreau, P.J. Babulic, R.A. Morin, and N.J. Tienkamp*
- 43 The selection of truck haulage and teledumper trucks for backfilling at the Cannon Mine;
 J. Baz-Dresch
- 47 Kiruna Electric a technological breakthrough in inclined ore haulage; *B. Morisson*
- 52 Atmospheric fog in Canadian mines; A.E. Hall, M.K. Gangal, and S.B.V. Stewart.
- 55 AOSTRA's underground test facility (UTF): mine-assisted recovery under difficult conditions;

J.C. ORourke and J.A. Haston

- 66 Electric LHD operation at Inco Limited, Ontario Division; M.E. Sirkka
- 70 Stability of high narrow backfills; *R.J. Mitchell*
- 75 Autogenous grinding 1987-update; A.R. MacPherson
- 87 On the utilization of nickel smelter slags; *G. Heinrich*

FEBRUARY 1989

33 Bourlamaque batholith and its gold potential, Val d'Or, Quebec Mehmet F. Taner and Pierre **Trudel**

- 43 Time domain spectral IP results from three gold deposits in northern Saskatchewan; *Ian Johnson, Elaine Webster, Ron Matthews and Steve McMullan*
- 50 Gold exploration using tills of the Beardmore-Geraldton area, northern Ontario; Stephen ft Hicock and Fridrik J. Kristjansson
- 55 Criteria for quarry development in southeastern Ontario; *C.P. Verschuren, P. W. Kingston and W.F.Caley*
- 61 Wollastonite in eastern Ontario; A. Mac Kinnon and W.F. Caley
- 68 Automatic control of conventional and semi-autogenous grinding circuits; A.L Mular
- 75 Practical liquid/solids calculations for thickeners; *A.C. Bonnier*
- 77 History Lessons; Robert B. Parsons

MARCH 1989

- 111 Technical and economic comparison of continuous and discontinuous loading In underground ore production and tunnelling; Egon Berger.
- 118 Current and future demand for aggregate In teh Edmonton region; *W.A.D. EDwards*
- 124 Downsizing: a consultant's perspective; John Stoten, Murray Axmith
- 128 A study on kriging small blocks; Margaret Armstrong and Norman Champigny
- 134 A study of transportation and storage characteristics of a chalcopyrite concentrate from Neves Corvo Mine, Alentejo, Portugal; *R.A.. Guedes de Carvalho, CG. Gonzalez Beça, M. N. Sampaio, O. Neves, M.A. Sol Pereira*

and H. Sousa Vale.

- 143 The Emerald Lake concentrator design and commissioning; Gary Hawthorn
- 165 Refining of platinum-group metals; G.P. Demopoulos

172 Microsilica dust in the ferrosilicon industry; *A.B. El-Nikhaily, M.A.I El Zeky and MA. Shahin*

APRIL 1989

- 21 Influence of various parameters on underground accidents: a multifactorial approach in Quebec mines; *N.* ft *Billette, and M. Laf lamme,*
- Development of Ontario's cap lamp standard;
 J. Vergunst,
- 37 Rockburst research at Falconbridge Limited; D.M. Morrison.
- 48 An improved dewatering process for mill tailings; *T. Yalcin*,
- 55 The potential economic consequences of layoffs to affected employes; *LA. Wolff*
- 58 An overview of industrial minerals in Manitoba; W. ft Gunter,
- 64 Taxation as a source of financing; Robert B. Parsons,
- 89 A plasma heater for the tundish of a continuous caster;*C. Chapman and P. Cowx,*

MAY 1989

- 31 Introduction to the Red Dog Project; *H.M. Giegerich*
- 34 The Red Dog Mine; *W.R. Hargrave*
- 37 Toe buttressing procedure to stabilize slide zones for dragline stripping operations; *F.Z. Khan, D. Nikols*
- 51 Selective continuous surface miners and their possible applications in oil sands mining; *T.S. Golosinski*
- A survey of operations research applications in the mining industry;
 E. Topuz and C. Duan

- 58 Downhole geophysics as an aid to the interpretation of an evaporite sequence: examples from Nova Scotia; *D.C. Carter*
- 65 Mineralogical and process controls on the oxidative acid-leaching of radioactive phases in elliot Lake, Ontario, uranium ores: I uraninite, uranothorite and monazite; *R.O. I fill, AH. Clark, W.C. Cooper*

JUNE 1989

- 35 Ammonium sulphate as activator in sulphidized xanthate flotation of malachite; *Wenbin Zhang, George W. Poling,*
- 40 Demonstration heap leaching; G. W. McDonald
- 46 Geochemical rock sampling for gold in the Munro Township area, Ontario: an orientation survey; *G.R. Webber, P.J. Whittaker*

- 53 Design guidelines for open stope support; Y. Potvin and M. Hudyma, Noranda, and H.D.S. Miller
- 63 Practical rock engineering in the optimization of stope dimensions - application and cost effectiveness; *J. W. Bawden, J. Nantel, and D. Sprott*
- 142 Pyrometallurgical processing of Stillwater concentrates; *J. W. Matousek, J.G. We Hock, P.J. Marcantonio, R.J. Phillips*
- 146 Circular vibrating screens in cyanidation scavenger circuit for carbon dewatering; *MacKenzie Dickson*
- 71 Income taxes going up and spending, too; *Robert B. Parsons*