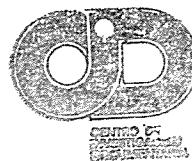


622:549
U.S.
1988

Minerals Yearbook



23 OCT. 1990



U.S.
DEPARTMENT
OF THE
INTERIOR



BUREAU OF
MINES

1988

Contents

	<i>Page</i>
Foreword, by T S Ary	iii
Acknowledgments, by V. Anthony Cammarota, Jr	v
Survey methods and statistical summary of nonfuel minerals, by Gloria L. Walker and Stephen D. Smith	1
Mining and quarrying trends in the metals and industrial minerals industries, by Arnold O. Tanner	45
Abrasive materials, by Gordon T. Austin	89
Aluminum, by Patricia A. Plunkert	109
Antimony, by Thomas O. Llewellyn	125
Asbestos, by Robert L. Virta	133
Barite, by Sarkis G. Ampian	141
Bauxite and alumina, by Patricia A. Plunkert and Ruth A. Hough	155
Beryllium, by Deborah A. Kramer	165
Bismuth, by Stephen M. Jasinski	171
Boron, by Phyllis A. Lyday	177
Bromine, by Phyllis A. Lyday	185
Cadmium, by Thomas O. Llewellyn	191
Calcium and calcium compounds, by David E. Morse	197
Cement, by Wilton Johnson	201
Chromium, by John F. Papp	231
Clays, by Sarkis G. Ampian	251
Cobalt, by Kim B. Shedd	289
Columbium and tantalum, by Larry D. Cunningham	299
Copper, by Janice L. W. Jolly and Daniel Edelstein	309
Diatomite, by Arthur C. Meisinger	365
Feldspar, nepheline syenite, and aplite, by Michael J. Potter	369
Ferroalloys, by Clark R. Neuharth	377
Fluorspar, by David E. Morse	397
Gallium, by Deborah A. Kramer	407
Gem stones, by Gordon T. Austin	413
Gold, by John M. Lucas	425
Graphite, by Harold A. Taylor, Jr	449
Gypsum, by Lawrence L. Davis	461
Helium, by William D. Leachman	471
Iodine, by Phyllis A. Lyday	479
Iron ore, by Peter H. Kuck	483
Iron oxide pigments, by Donald P. Mickelsen	523
Iron and steel, by Anthony T. Peters	533
Iron and steel scrap, by Raymond E. Brown	553
Kyanite and related materials, by Michael J. Potter	577
Lead, by William D. Woodbury	581
Lime, by M. Michael Miller	619
Lithium, by Joyce A. Ober	629
Magnesium, by Deborah A. Kramer	637
Magnesium compounds, by Deborah A. Kramer	645
Manganese, by Thomas S. Jones	651
Mercury, by Robert G. Reese, Jr	667
Mica, by Lawrence L. Davis	673

Contents

	<i>Page</i>
Molybdenum, by John W. Blossom	681
Nickel, by William S. Kirk	691
Nitrogen, by Raymond L. Cantrell	703
Peat, by Raymond L. Cantrell	715
Perlite, by Arthur C. Meisinger	725
Phosphate rock, by William F. Stowasser	729
Platinum-group metals, by J. Roger Loebenstein	745
Potash, by James P. Searls	757
Pumice and pumicite, by Arthur C. Meisinger	767
Quartz crystal, strontium, wollastonite, and zeolites, by Joyce A. Ober, Michael J. Potter, and Robert L. Virta	771
Rare-earth minerals and metals, by James B. Hedrick and David A. Templeton	779
Salt, by Dennis S. Kostick	791
Sand and gravel, construction, by Valentin V. Tepordei	813
Sand and gravel, industrial, by Wallace P. Bolen	833
Silicon, by Joseph Gambogi	845
Silver, by Robert G. Reese, Jr	855
Slag—iron and steel, by Judith F. Owens	875
Soda ash and sodium sulfate, by Dennis S. Kostick	889
Stone, crushed, by Valentin V. Tepordei	901
Stone, dimension, by Harold A. Taylor, Jr	913
Sulfur, by David E. Morse	923
Talc and pyrophyllite, by Robert L. Virta	947
Thorium, by James B. Hedrick	955
Tin, by James F. Carlin, Jr	961
Titanium, by Langtry E. Lynd and Ruth A. Hough	973
Tungsten, by Gerald R. Smith	987
Vanadium, by Henry E. Hilliard	1005
Vermiculite, by Arthur C. Meisinger	1015
Zinc, by James H. Jolly	1019
Zirconium and hafnium, by James B. Hedrick	1049
Minor metals, by Staff, Branches of Nonferrous and Ferrous Metals	1059