

Proceedings of

**COAL COMBUSTION BY-PRODUCTS
ASSOCIATED WITH COAL MINING -
INTERACTIVE FORUM**

Southern Illinois University
at Carbondale
October 29-31, 1996



Edited by:
Yoginder P. Chugh
Brandi M. Sangunett
Kimery C. Vories

Sponsored by:
U.S. Department of the Interior, Office of Surface Mining, Alton, Illinois
Coal Combustion Residues Management Program, and
Mining Engineering Department, Southern Illinois University at Carbondale

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Coal Combustion By-Products Associated with Coal Mining Interactive Forum

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Foreword

Over the last decade, management of coal combustion by-products (CCBs) in mining areas has assumed significant importance as landfilling costs have increased at an accelerated pace. Mined-out areas provide a natural habitat for coal combustion by-products, provided their engineering and environmental characteristics can be utilized in areas such as structural fill, road construction, soil modification, and acid mine drainage and subsidence control.

Coal Combustion By-Products Associated with Coal Mining- Interactive Forum was organized to share experts and experience from throughout the U.S. and to compile an authoritative technical reference on the subject. The forum successfully achieved both these goals based on attendance, quality of presentations, and quality of proceedings.

Southern Illinois University at Carbondale, was pleased to host the forum. The co-sponsorship of the forum is truly impressive and I extend my sincere thanks to all the organizations for their efforts in making this forum a success. I would also like to take this opportunity to thank the members of the steering committee, chairs and co-chairs of the sessions, authors and co-authors of technical presentations, discussion panelists, and exhibitors for their interest and involvement in the forum. Without their support, the forum would not have been a success.

The papers were reviewed technically and editorially to develop a high quality proceedings. The proceedings also include a discussion for each session and the outcomes of Workgroup deliberations.

Once again, thanks to each and every one of you for participating in the forum and making it a tremendous success.

Yoginder P. Chugh
December 28, 1996

List of Acronyms

AMD	Acid mine drainage
ARS	Agricultural Research Service
ASTM	American Society for Testing and Materials
CCB	Coal combustion by-product
CCBs	Coal combustion by-products
CCW	Coal combustion waste
CLSM	Controlled low strength material
DNR	Department of Natural Resources
DOE	Department of Energy
DTPA	Diethylamine-triamine-penta-acetic acid
EERC	Energy and Environmental Research Center
EPRI	Electric Power Research Institute
FBC	Fluidized bed combustion
FGD	Flue gas desulfurization
ICCI	Illinois Clean Coal Institute
OSM	Office of Surface Mining
PFBC	Pulverized fluidized bed combustion
ppm	parts per million
psi	pounds per square inch
RCRA	Resource Conservaton and Recovery Act
SGLP	Synthetic groundwater leaching procedure
SIUC	Southern Illinois University at Carbondale
SMCRA	Surface Mining Control Reclamation Act
TCLP	Toxicity characteristic leaching procedure
TVA	Tennessee Valley Authority
U.S.	United States
US EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WRI	Western Research Institute