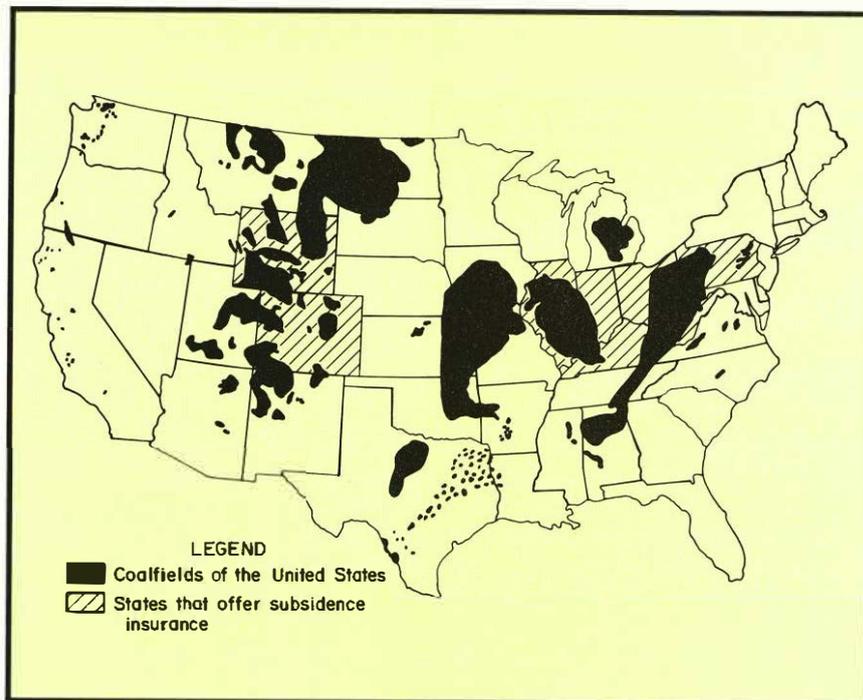


Mine subsidence insurance programs

By David K. Ingram

An estimated seven million acres of U.S. land has been undermined. Already, approximately 1.9 million of those acres have been affected by surface subsidence. Of the 100,000 underground coal mines that exist, 90,000 are presently abandoned or inactive, leaving nearly 5.2 million acres of undermined area that has not yet subsided. Of that figure, about 500,000 acres are situated under urban, populated areas.

The National Research Council Committee on Ground Failure Hazards has estimated that between



The illustration above compares the coalfields in states offering subsidence insurance.

1925 and 1975, landslides and subsidence caused at least \$75 billion in losses. Subsidence damage is three times higher than the estimated damage caused by floods, hurricanes, tornadoes and earthquakes.

The U.S. insurance industry has investigated the feasibility of offering insurance for damage resulting from subsidence. The Mine Subsidence Task Force of the National Committee on Property Insurance conducted a study in 1986. Their conclusion was

that “before the insurance industry is called upon to underwrite the devastation that results from mine and other land subsidence, more research is needed in the hazard’s prediction, cost and insurability.”

The U.S. Department of Interior’s Bureau of Mines (BoM) has been investigating subsidence events. Research is directed toward preventing or minimizing the effects of subsidence. Earlier investigations helped instigate the enactment of a

Author information

David K. Ingram is a geologist working for the U.S. Bureau of Mines. This article was excerpted from Ingram’s paper, which details each state.

Table I—Summary of mine subsidence insurance programs

State	Start	Initial funds	Administered by:	What is insurable?	Subsidence type	Max. coverage	Annual fee Res.	Annual fee Com.	Deductible Res.	Deductible Com.	Comp-licity	Policy holders	Balance (mil.)
Colorado	1988	Federal	State & Ins. Co.	R ¹	Coal	\$50,000	\$35 ³	—	\$1,000	—	V ⁵	25,000	\$2.9
Illinois	1979	State	Ins. Assoc.	R&C ²	Coal, clay, limestone, etc.	\$350,000	\$8-\$53	\$8-\$53	\$500	\$500	M ⁶	300,000	\$3.8
Indiana	1986	Federal	State & Ins. Co.	R&C	Coal	\$50,000	\$15-\$22	\$24-\$38	\$250-\$500	\$250-\$500	M	30,000	\$1.5
Kentucky	1986	Federal	State & Ins. Co.	R&C	Coal	\$50,000	\$15-\$22	\$24-\$38	\$250-\$500	\$250-\$500	M	43,000	\$4.5
Ohio	1987	State	State & Ins. Co. & Federal	R	Coal, clay limestone, etc.	\$50,000	\$20	—	\$250-\$500	—	V	9,700	\$100
Penn.	1961	State	State	R&C	Coal & clay	\$100,000	\$12-\$18	\$63-\$348	\$250	\$500	V	40,000	\$11.3
W. Va.	1983	State	State & Ins. Co.	R&C	Coal	\$75,000	\$10-\$23	\$20-\$46	\$250	\$250	M	110,000	\$9
Wyoming	1986	Federal	State & Ins. Co.	R&C	Coal	\$150,000	\$2/\$1,000 ⁴	\$3/\$1,000	\$250-\$500	\$250-\$1,000	V	1,000	\$1.2

¹Residential structure, ²Commercial structure, ³One-time initial \$100 inspection fee, ⁴Per \$1,000 coverage, ⁵V = Voluntary, ⁶M = Mandatory

federal law that protects society from the adverse effects of coal mine operations. These investigations influenced legislation, which created grants for states to initiate their own mine subsidence programs.

Recognizing surface subsidence and the resulting structural damage can be a difficult task. Depending upon the type of subsidence, the ground surface could deform in several different ways. Some of the typical damage that occurs to structures includes the following:

- cracks in foundation or basement walls and floors;
- separation of stoop, steps and patio from the main house;
- tilting of sections of the house;
- jamming or sticking of doors and windows; and
- roof leakage.

Structural damage due to normal ground movement or poor construction, however, is often mistaken for subsidence damage. Seasonal changes in the soils, such as changes in moisture content or freeze-thaw cycling, can cause similar damage to structures. Poor construction methods, such as low-quality concrete mix and/or poor structural support, may not prevent the damaging effects of normal soil swelling that surrounds foundations. Final decisions on whether or not structural damage has been actually caused by mine subsidence should be determined by experienced professionals.

State programs

Until 1977, the states were responsible for the regulation and control of subsidence-related problems on non-federal lands. On August 3, 1977, Public Law 95-87, the Surface Mining Control and Reclamation Act (SMCRA), was enacted. Provisions within this act help regulate the effects of underground coal mining operations on the surface.

Under SMCRA, coal companies are required to design and implement methods to prevent, control or minimize the effects of subsidence. In addition, all underground coal companies are required to pay a \$0.15 fee for every ton of coal produced. This fee, along with surface mining operation fees (\$0.35 per ton), are deposited into the Abandoned Mine Land Reclamation Fund.

Money from the Abandoned Mine Land Reclamation Fund helps cover the reclamation costs of underground and surface strip mines abandoned before 1977.

Stabilizing or reclaiming the area that is subsiding due to a pre-1977 abandoned mine is considered a reclamation cost. Surface structures that are damaged by the subsidence, however, are not considered reclamation costs.

Operating coal companies are responsible for reclamation costs

involved with uncontrolled subsidence caused by abandoned mines after 1977. Liability costs of subsidence damage to surface structures caused by mining after 1977, however, depend upon individual state regulations.

In 1984, Congress enacted amendments to the SMCRA. One of the changes was the authorization of grants of up to \$3 million from the Abandoned Mine Land Reclamation Fund for the establishment of state-operated mine subsidence insurance

At Cincinnati, We Exceed Our Customers' Expectations!

The Cincinnati Mine Machinery Company

is a leading manufacturer of components for coal, salt and potash mining. Our products, including conveyor chains, clearance chains, sprockets and driving components, cutter drums and all types of bit lugs, trim chains, cutter chains and bars, are precision-engineered for highest quality and longest service life.

In addition, our **Total Quality Management Program** assures continuous improvement in our products, our deliveries and the **value** we provide. We have extensive CAD capabilities and supply prototype services for OEM's and aftermarket customers.

13 strategically-located warehouses to serve you better!



The Cincinnati Mine Machinery Co.

2980 Spring Grove Avenue
Cincinnati, OH 45225
Phone (513) 541-6303
FAX (513) 541-6095

70 years of service to miners worldwide.



1992 KEYSTONE COAL INDUSTRY MANUAL

Your Complete Guide To The Coal Mining Industry

The **KEYSTONE COAL INDUSTRY MANUAL** is the most prestigious, comprehensive and widely used directory for finding and selecting the best type of coal for maximum efficiency. It will aid you in pinpointing your market and provide the information you need.

All listings have been updated -

•Coal Sales Organizations •Exporters of Coal
•Tidewater Piers •Transportation of Coal, Railroads, Inland Waterways •Consultants and Financial Firms •Utilization of Coal

All statistics have been updated -

•Top 15 Producing Companies •50 Biggest Mines •U.S. Reserve by State •Production by State •Production by Mining Method

You'll get added insight on major coal areas :

COAL PRODUCTION DIRECTORIES -

coal mining companies, coal preparation plants, coal mines, coal seams and coal reserves

COAL UTILIZATION DIRECTORIES -

coal burning utilities, coke plants, cement plants and coal burning industrial plants

COAL SALES AND TRANSPORT DIRECTORIES -

coal sales firms, export firms, rail and river transport facilities, tidewater and lake docks

* NEW FEATURE -

Coal specs and prices for coal received by electric utilities

PLUS, included in the 1992 Keystone Manual, are the **1992 KEYSTONE BONUS MAPS**

- U.S. Coal Fields Map
- Coal Production by County Map
- Inland Waterways Map

12/91

ORDER FORM

YES! Rush me _____ copies of the **1992 KEYSTONE COAL INDUSTRY MANUAL (M-541)**

PRICES

U.S. - \$190 each copy, plus \$6 per copy for UPS shipping and handling. IL RESIDENTS ADD: 8% sales tax.

CANADA, HAWAII, ALASKA - \$190 each copy - mailed book rate (\$6 per book). UPS service available at add'l charge. Any books shipped book rate are uninsurable and delivery cannot be guaranteed.

OVERSEAS - \$190 each copy, plus overseas airmail - \$46 per book. Enclose U.S. currency only. Please include street address. Prices subject to change without notice.

\$ _____ TOTAL PAYMENT ENCLOSED

VISA MasterCard Check/Money Order

Account # _____ Exp. _____

Name _____

Company _____

Address _____

City/State/Zip _____

Telephone _____

Mail to: Mining Information Services, Maclean Hunter Publishing Co. P.O. Box 6500, Chicago, IL 60680 Telephone: 312-726-2802, ext. 343 Fax: 312-726-2574

programs. In order to be eligible for the grant, states must contribute to the fund and have SMCRA-approved Abandoned Mine Land Reclamation programs. States that receive the grant have up to eight years to become self-sustaining.

There are 21 states eligible for federal subsidence assistance. Currently, eight states have mine

subsidence insurance programs (Table I): Colorado, Illinois, Indiana, Kentucky, Ohio, Pennsylvania, West Virginia and Wyoming. Six of the eight states used federal grant money to initiate their programs. The other two states initiated their programs with state appropriations.

For information contact the U.S. Bureau of Mines in Pittsburgh, Pa. ■

The following federal and state agencies are involved with mine subsidence insurance and have information available.

Federal government:

Office of Surface Mining (OSM)
Reclamation and Enforcement
Eastern Field Operations
10 Parkway Center
Pittsburgh, PA 15220
412/937-2828

Office of Surface Mining (OSM)
Reclamation and Enforcement
Western Field Operations
1020 15th St.
Brooks Towers
Denver, CO 80202
303/844-2459

Colorado:

Colorado Mine Subsidence Protection Program
950 17th St.
Suite 1850
Denver, CO 80202
800/44-MINES

Colorado Department of Natural Resources
Mine Land Reclamation Division, Inactive Mine
Reclamation Program
1313 Sherman St.
Room 423
Denver, CO 80203
303/866-3567

Illinois:

The Illinois Mine Subsidence Insurance Fund
332 South Michigan Ave.
Chicago, IL 60604
312/427-2006

Illinois State Geological Survey
Natural Resources Building
615 E. Peabody Dr.
Champaign, IL 61820
217/333-4747

Indiana:

Indiana Department of Insurance
311 West Washington St.
Suite 300
Indianapolis, IN 46204-2787
317/232-5859

Kentucky:

Kentucky Mine Subsidence Insurance Fund
P.O. Box 517
Frankfort, KY 40602
502/564-6094

Ohio:

Ohio Mine Subsidence Insurance
Underwriting Association
6230 Busch Blvd
Suite 303
Columbus, OH 43229
614/436-4530

Ohio Department of Natural Resources
Division of Reclamation
Fountain Square
Columbus, OH 43224
614/265-1092

Pennsylvania:

Mine Subsidence Insurance Fund
Department of Environmental Resources
3913 Washington Rd.
McMurray, PA 15317
412/947-7100

Mine Subsidence Insurance Fund
320 South Pennsylvania Blvd.
Suite 380
Wilkes Barre, PA
717/826-2542

West Virginia:

Board of Risk and Insurance Management
1900 Kanawha Blvd. East
Charleston, WV 25305-0001
304/348-2291

Wyoming:

Mine Subsidence Insurance Program
Herschler Building
122 West 25th St.
Cheyenne, WY 82002
307/777-7063

Department of Environmental Quality
Land Quality Division
Herschler Building
3rd Floor West
122 West 25th St
Cheyenne, WY 82002
307/777-7065

COAL

SEP 28 1992

A MACLEAN HUNTER PUBLICATION

SEPTEMBER 1992

***** 5-DIGIT 15236
00046170 CM 9305 #00937
JOHN MURPHY
BUREAU OF MINES
PO BOX 13070
PITTSBURGH, PA 15236

W. Kulesz



MINE EXPO

COAL

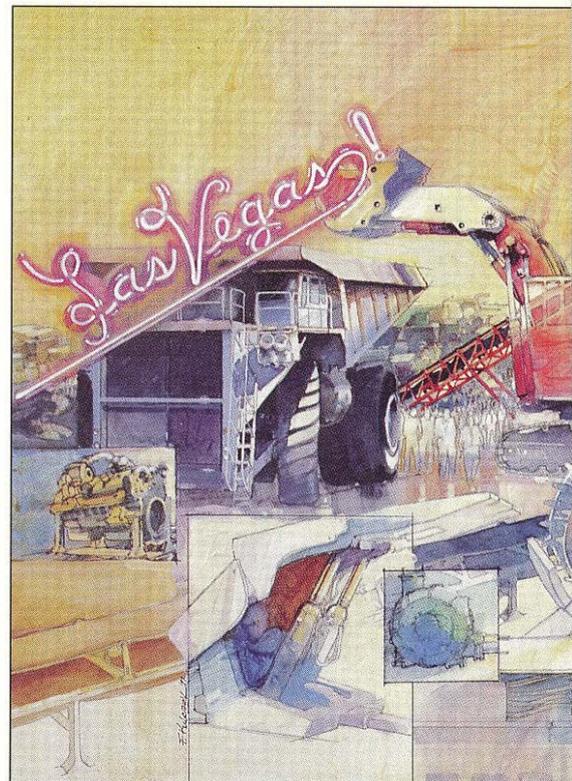
VOLUME 97, No. 9

Features

Bright Lights, Big City.....	45
Las Vegas will provide visitors to MINExpo with neon, gambling and a host of entertainment and sightseeing possibilities	
MINExpo Exhibition in Print.....	59
A preview of the more than 650 exhibitors who will display their wares at the Las Vegas Convention Center during MINExpo '92	
Managing Coal Quality Made Easier, and Better.....	112
A survey of modern technology available to today's preparation plant managers	
Replacement Strategies Keep Conveyors Running.....	121
Monitoring tips explain how belt life can be extended	

Coal in the News

Senate overwhelmingly passes comprehensive energy bill; includes UMWA health plan bailout	7
Both sides accept Rockefeller's plan to merge UMWA funds	
CCT's Encoal project begins full-scale operation.....	16
Gillette, Wyo.-based project ready for two-year test run	
Small producers could be hit by soaring compensation costs.....	17
Unless assembly intervenes, workers' comp costs could jump 75%	
Peabody, UMWA dispute could force closure of Mine No. 10.....	26
Unless concessions are made, Pawnee, Ill., mine could close by year's end	
New focus could see Addington separation.....	34
Company president proposes dividing into specialty companies	
Despite pleas, Joppa won't likely be scrubbing.....	34
Electric Energy appears to be favoring a switch to low-sulfur coal	



The bright lights of Las Vegas, Nev., will greet the more than 30,000 mining professionals who are expected to attend MINExpo International '92. The Las Vegas Convention Center will host more than 650 exhibitors from around the world. Conference sessions, featuring international coal, minerals and metals issues and U.S. concerns, will also be held.

Departments

Coal in the news	7
News briefs	16
Events.....	24
Coal worldwide	39
Marketwatch	41
Developments to watch.....	127
Operating ideas.....	129
Management.....	130
Newsmakers.....	134
New products	136
Court decisions.....	144
New literature	147
Mining mart	153
Classified advertising	156
Advertising index.....	160