

Availability of the Herrin Coal for Mining in Illinois

Map Sheet 3, Underground Mining

Colin G. Treworgy, Christopher P. Korose, and Christine L. Wiscombe
Map Summary of Illinois Minerals 120
2000

Underground Mining

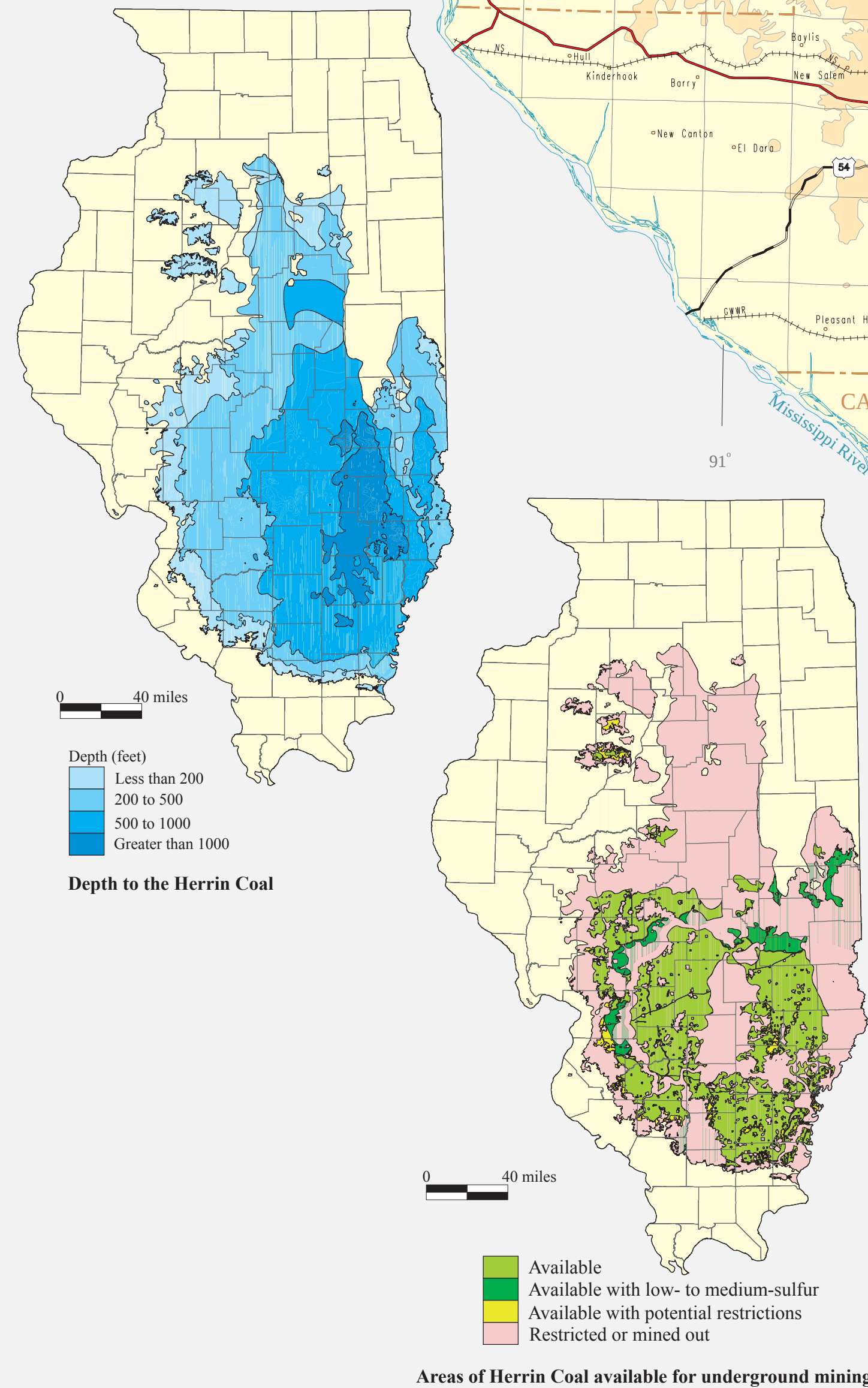
Most of the resources of Herrin Coal will have to be mined by underground methods. The available resources are primarily located in the central and southern parts of the state and are well suited for high-efficiency longwall mining. The resources are relatively flat-lying, have a consistent seam thickness over large areas, are relatively free of faults, channels, or other geologic anomalies, are located predominantly in rural areas free from oil wells and other surface development and occur in minable blocks of hundreds of millions of tons. To avoid high mining costs resulting from unfavorable geologic conditions, mining companies should avoid areas with thick drift and thin bedrock cover, in close proximity to the Wabashite or Anvil Rock Channels, margins of the Energy Shale deposits, Anvil Rock Sandstone in the immediate roof, and faults.

Acknowledgments

We especially appreciate the information given to us by mining experts on criteria that limit the minability of coal. Interviews were conducted with AMAX Coal Company, Arch Minerals, Archer Coal Company, Black Beauty Coal Company, Consolidation Coal Company, Cypress-AMAX Coal Company, Freeman United Coal Mining Company, Kent-McGee Coal Company, MAPCO Coal Inc., Midstate Coal Company, Monterey Coal Company, Old Ben Coal Company, Peabody Coal Company, Sahara Coal Company, Sugar Camp Coal Company, Tarris Coal Company, Weir International Mining Consultants, and the Illinois Office of Mines and Minerals.

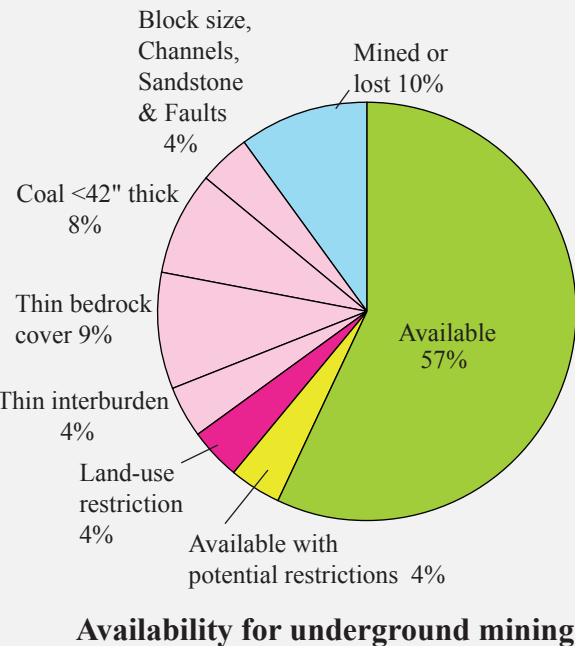
This project utilized stratigraphic data, coal analyses, and other data compiled over many years by ISGS staff. Jamie McBeth assisted with the cross sections. Henry Dambarger provided valuable advice and encouragement throughout this project and was instrumental in setting up contacts with mining experts. Barbara Staff provided many of the cartographic elements used for the base map and provided advice on digital cartographic techniques.

This project was supported by the U.S. Geological Survey, Department of the Interior, under agreement nos. 14-08-0001-A0773, 14-08-0001-A0841, 1434-92-A0940, 1434-93-A1137, 1434-94-A1206, 1434-95-A0136, 1434-10026-A0160, 1434-10027-A01759, 1434-98HQAG-2013 and 1434-99HQAG-0081. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government. This map is published with the understanding that the U.S. Government is authorized to reproduce and distribute reprints for governmental use.



Resources available for underground mining, millions of tons and percent of original resources

Original:	86,331
Mined (percent of original):	8,388 (10%)
Remaining (percent of original):	77,943 (90%)
Available:	49,299 (57%)
Available with potential restrictions:	3,254 (4%)
Land-use restrictions:	2,611 (4%)
Technical restrictions:	21,778 (25%)
Thin bedrock cover:	7,377 (8%)
Seam <42 inches thick:	6,631 (8%)
Thin interburden:	3,554 (4%)
Block size:	2,086 (2%)
Near channel:	985 (1%)
Sandstone within 5ft of coal:	687 (1%)
Poor roof conditions under Energy Shale:	384 (<1%)
Faulted:	273 (<1%)
Partings - the areas on the map identified as "split coal"	
are estimated to contain 1 billion tons of additional coal that is not included in the original resources:	



Factors influencing the availability of coal for underground mining

COAL THICKNESS	MINED AREAS	LAND-USE RESTRICTIONS
Greater than 66 inches	Mined area: surface	Interstate
42 to 66 inches	Mined area: underground	Town
28 to 42 inches	Active mine	More than 7 oil wells/40 acres
Less than 28 inches		Other land-use restrictions (see table above)
Split coal		
Insufficient data	SURFACE FEATURES	TECHNOLOGICAL RESTRICTIONS
Sandstone channel	Stream or small river	Thin interburden
	Large river, lake	Bedrock overburden too thin
	U.S. Highway	Unfavorable bedrock to unconsolidated overburden ratio
	Railroad	Area affected by faults/dikes
	Pipeline	Small or irregularly-shaped mining block
OTHER GEOLOGIC FACTORS	POTENTIAL RESTRICTIONS	Within 0.5 mile of Wabashite Channel
Rocks of Pennsylvanian System eroded	Potential land-use conflict	Anvil Rock Sandstone in immediate roof
Extent of rocks of Pennsylvanian System	4 to 7 oil wells/40 acres	
Low- to medium- sulfur coal area, bounded by zone with transitional roof between the Energy Shale and Anna Shale/ Brecken Limestone		

