KENTUCKY GEOLOGICAL SURVEY
Donald C. Haney, State Geologist and Director
UNIVERSITY OF KENTUCKY, Lexington

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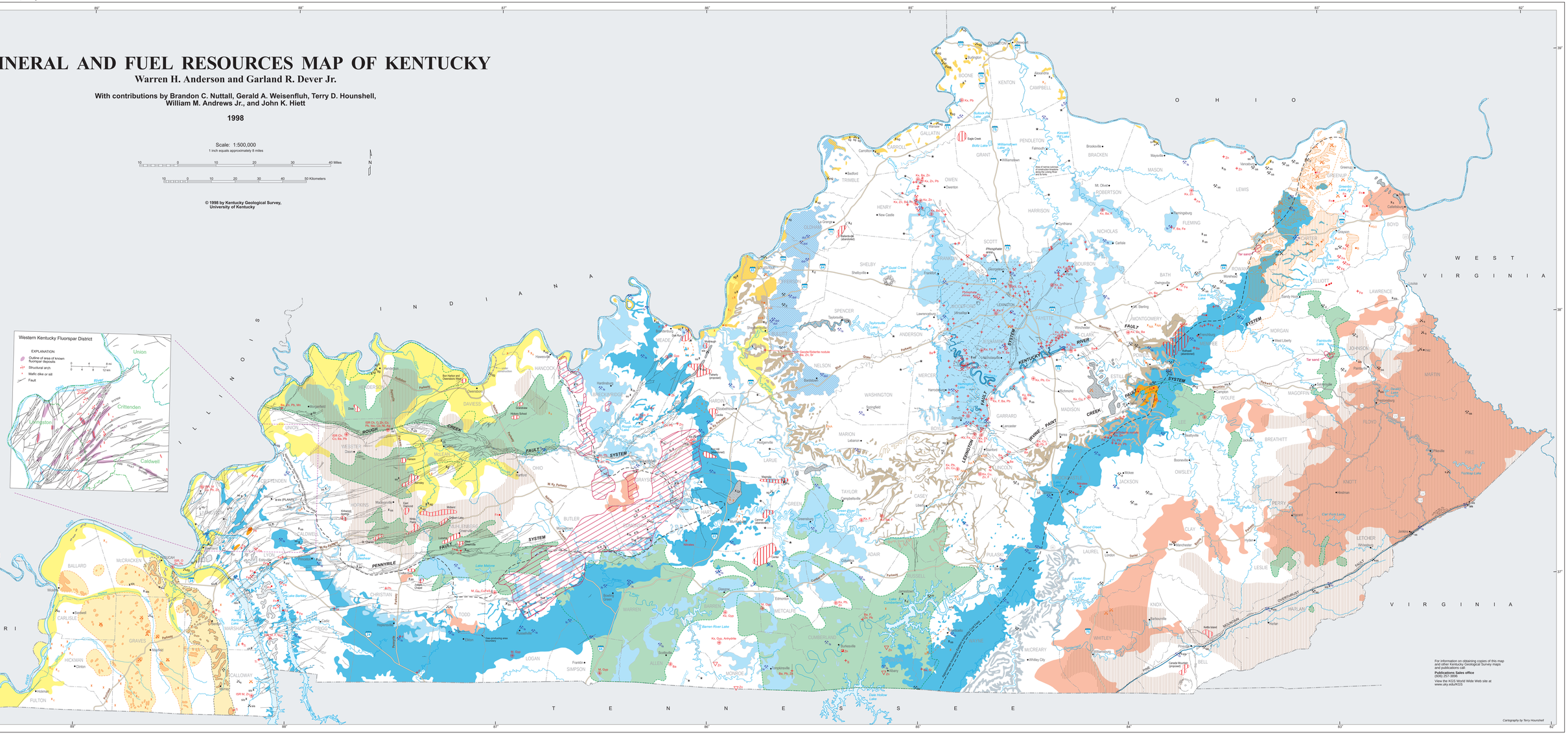
MINERAL AND FUEL RESOURCES MAP OF KENTUCKY

Warren H. Anderson and Garland R. Dever Jr.

With contributions by Brandon C. Nuttall, Gerald A. Weisenfluh, Terry D. Hounshell, William M. Andrews Jr., and John K. Hiett

1998

Scale: 1:500,000
1 inch equals approximately 8 miles



EXPLANATION

LIMESTONE

- Construction limestone
- Narrow outcrop of construction limestone; *noted on the map by asterisk and leader (→) occurrences in Allen, Edmonson, Hart, Livingston, Carroll, Owen, Henry, Pendleton, Hamilton, and Madison Counties*
- Industrial and construction limestone
- Narrow outcrop of industrial and construction limestone; *occurs along the bluffs of the Ohio River, in the Knobs region, along the Kentucky River Palisades, Cumberland Mountains, Pottsville Escarpment, and Madison, along Pine Mountain Overthrust Fault, in the vicinity of Lake Lines, Lake Barkley and the Cumberland River in western Kentucky*
- Dolomite
- Ls_n Limestone quarry or underground mine
- Dol_n Dolomite quarry or underground mine

SAND and GRAVEL

- Rockcastle Sandstone
- Quaternary sand and gravel
- Sand and gravel
- Sand and gravel, glacial outwash
- Alluvium
- Ss_n Active sandstone quarry
- Ss_a Abandoned sandstone quarry
- Ds_n Abandoned dimension stone quarry
- Ms_a Abandoned millstone quarry
- Sg_n Active sand pit
- Sg_a Abandoned sand pit
- Sg_d Active sand and gravel pit
- Sg_{ds} Abandoned silica sand pit
- Sg_x Deposit; s–sand; ns–silica sand; g–gravel; *Qs–Quaternary sand; Qg–Quaternary gravel; Ch–chert; D–dimension stone; PC–Pennsylvanian conglomerate*

CLAY and SHALE

- New Providence Shale
- Area of Porters Creek Clay
- Mapped Porters Creek Clay
- Area of ceramic clay
- Mapped ceramic clay
- Olive Hill clay bed
- Hitchins clay bed
- Active clay pit
- Abandoned clay pit
- Clay deposit (common clay)
  - *s–clay noted in core*
  - *st–structural clay*
  - *sh–shale; underclay*
  - *es–expanded aggregate*
  - *NA–New Albany Shale pit*
  - *uc2–underclay, under Princess No. 3 coal*
  - *uc7–underclay, over Princess No. 7 coal*
  - *Hitchins–Hitchins underground mine*
- Residual clay
- Br_n Brick plant

OIL and GAS

- Major oil-producing area; *dashed green line is used to continue the outline of oil-producing area through areas indicating the presence of other resources.*
- Major gas-producing area
- Gas-storage field
- Tar sand resource area
- Ts_n Tar sand occurrence

COAL

- Major coal-producing area
- Coal field boundary

MINERAL DEPOSITS

- Iron
- Fe_a Abandoned iron mine
- Ph_a Abandoned phosphate mine
- Abandoned vein mineral mine
- Fn_a Abandoned iron furnace
- Fluorite *(shown on Western Kentucky Fluorspar District inset map only; no deposits shown on main map)*
- ISR M Mineral occurrence in core
  - *Ma–Mineral residue in well sample*
  - *Q–Quaternary*
  - *M–Mississippian*
  - *S–Silurian*
  - *O–Ordovician*
  - *Є–Cambrian*
  - *Ko–Knox Group*
- Mineral occurrence (Ba, Cc, F, Pb, or Zn unless noted otherwise)
  - *Ag–Silver*
  - *Ba–Barite*
  - *Cc–Calcite*
  - *Cel–Celestite*
  - *Co–Cobalt*
  - *Cu–Native copper*
  - *Dol–Dolomite*
  - *Fe–Iron*
  - *Gyp–Gypsum*
  - *Mo–Molybdenum*
  - *Mn–Manganese*
  - *Pt–Platinum*
  - *Pb–Galena*
  - *S–Native sulfur*
  - *Sd–Sandstone*
  - *Ti–Titanium*
  - *Zn–Sphalerite*
- Kimberlite dikes
- Zn_d Zinc deposit
- Zn_e Zinc exploration shaft
- Red dashed line indicates area of fluorite occurrence
- Faults

Minerals and Fuels of Kentucky

The production of minerals and fuels in Kentucky is a multibillion dollar industry. Historically, coal, oil, natural gas, limestone, sand and gravel, clay, fluorite, barite, lead, iron, phosphate, zinc, and brines have been produced in the State. These resources have greatly influenced the development of Kentucky by providing raw materials for the early settlers who settled the State and for current industrial and economic development. Electrical power for homes, businesses, and factories; materials for constructing houses, buildings, automobiles, and roads; and products we consume in everyday life come from the earth's mineral and fuel resources.

The ability to locate and efficiently use raw materials is important in virtually all economic activity in the State. The purpose of this 1:500,000-scale map is to show the general locations of the principal mineral and fuel resources in Kentucky. The "Geologic Map of Kentucky" (Noger, 1988) is at the same scale as this map and has additional geologic information about these resources. For detailed information about geology and mineral resources, consult the 7.5-minute geologic quadrangle maps for Kentucky.

Coal occurs in two regions of Kentucky: the Eastern Kentucky Coal Field (a part of the Appalachian Basin) and the Western Kentucky Coal Field (a part of the Illinois Basin). Kentucky has been among the top three coal-producing states for more than 50 years. Kentucky's remaining coal resources, estimated at 90 billion short tons, are also among the largest deposits in the United States.

Limestone and dolomite are mined in Kentucky for a variety of products, including construction aggregate, lime, cement, and agricultural limestone. Coal-related industries use limestone for controlling acid drainage, mine reclamation, explosion abatement in underground mines, and in scrubbers at coal-burning power plants to reduce sulfur emissions entering the atmosphere. One of the largest operating limestone quarries in the United States is located in Kentucky.

Kentucky has an estimated original petroleum resource of 2.3 billion barrels of mobile oil, 3.4 billion barrels of heavy oil, and more than 100 trillion cubic feet of natural gas resources. At least 0.75 billion barrels of oil and 4.7 trillion cubic feet of natural gas have been produced in Kentucky. In western Kentucky, oil and some natural gas are produced primarily from Mississippian and Pennsylvanian rocks. In central Kentucky, oil and natural gas are produced from Ordovician and Silurian rocks. In eastern Kentucky, oil and natural gas are produced from Silurian, Devonian, Mississippian, and Pennsylvanian rocks.

In the past, a variety of ore minerals, including fluorite, sphalerite, galena, and barite, were mined in Kentucky. At the time of its peak production during World War II and in the mid-1960's, the Western Kentucky Fluorspar District was one of the world's largest producers of these minerals. Monroe, Cumberland, and Clinton Counties of the South-Central Kentucky Mineral District are known to have mineral deposits that contain zinc. The Central Kentucky Mineral District has produced barite, sphalerite, fluorite, calcite, and galena. Although there is no mining activity in any of the districts at the present time, mining companies continue to explore these areas for economic deposits. Iron ores and phosphorite minerals were mined in Kentucky before higher grade deposits were discovered elsewhere in the United States.

A variety of minerals classified as clay materials are mined in Kentucky, including common clay, ceramic and ball clays, refractory clay, and shale. These materials are used in the manufacture of brick, china, and pottery, and have been used as industrial absorbents and lightweight aggregate.

Sand and gravel are mined in Kentucky and are used extensively as construction materials and aggregate for roads and buildings. Common and silica sands have been mined for concrete and glassmaking, respectively. Sands bearing titanium minerals are found in the Jackson Purchase Region of western Kentucky. Tar sands (asphaltic sandstone) mined in west-central Kentucky have been used as road aggregate and are also a potential source of petroleum.

Geologists at the Kentucky Geological Survey have investigated the mineral and fuel resources of Kentucky for more than 150 years, as mandated by Kentucky Revised Statute. Questions concerning the mineral and fuel resources of Kentucky should be directed to the Director, Kentucky Geological Survey, 228 Mining and Mineral Resources Building, University of Kentucky, Lexington, KY 40506-0107. The Kentucky Geological Survey maintains the official State repository of oil and natural gas drilling records, the official Ground-Water Data Repository, the Kentucky Well Sample and Core Library, and other databases on coal, minerals, geology, maps, and paleontology. This information is used by thousands of citizens each year.

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More information on publications about Kentucky's mineral resources is available in the Kentucky Geological Survey's List of Publications, available free upon request to the Survey.