Introduction

Geology and Minability

This map is based on a series of studies that examined the availability of coal in Illinois for future mining. These studies utilized stratigraphic data and coal analyses compiled over the years by Illinois State Geological Survey, International Mining Consultants, and the Illinois Office of Mines and Minerals.

The Pennsylvania System in Illinois

Depth of the Pennsylvanian System ranges from about 600 feet in the northwestern two-thirds of the state to about 2,500 feet in the southeastern part of the state. The Pennsylvanian System is composed of 11 coal-bearing formations, of which the most productive are the Waukewan, Galatia, and Springfield.

Factors influencing the availability of coal for surface mining

The availability of coal for surface mining is determined by a variety of factors, including geology, land use, and environmental conditions. These factors include:

- **Geology**: The thickness and quality of the coal seams, as well as the presence of overburden and underlying rock formations.
- **Land use**: Restrictions on mining due to proximity to towns, highways, pipelines, and other infrastructure.
- **Environmental conditions**: Restrictions due to water-bearing zones, pipelines, and power lines.

**Resources**

- **Springfield Coal**
  - Thickness: 2.5 to 3.0 feet
  - Sulfur content: 0.6 to 1.7 pounds of sulfur per million Btu
  - Heat content: More than 20 to 23 million Btu per ton

**Quality**

- **Heat content**: Ranges from more than 20 to 23 million Btu per ton in the northwestern two-thirds of the state to more than 30 million Btu per ton in the southeastern part of the state.

**Surface Mining**

- **Potential restrictions**: For the remaining Springfield resources, there is a potential restriction associated with mining using strip methods. This includes factors such as the presence of power lines, roads, and pipelines.

**Underground Mining**

- **Potential restrictions**: For the remaining Springfield resources, there is a potential restriction associated with mining using underground methods. This includes factors such as the presence of water-bearing zones and pipelines.

**Availability**

- **Available**: Available means that the surface land use and geologic conditions related to mining are compatible with mining.
- **Mined or lost**: Mined or lost resources are those that have already been mined or are no longer available for mining.

**Land use restrictions**

- **Town restrictive to mining**: Restricted from mining within 0.5 miles of the channel (zone 1).
- **East-west cross section of the Pennsylvanian System in Illinois**

**Surface Mining**

- **Depth of bedrock**: 0 to 50 ft
- **Overburden**: Maximum unconsolidated overburden 60 ft

**Block size**

- **Minimum size of mining block (clean coal)**: 40 million tons

**Factors influencing the availability of coal for underground mining**

- **Water-bearing zones**: Restrictions due to water-bearing zones.
- **Pipelines**: Restrictions due to pipelines.
- **Power lines**: Restrictions due to power lines.

**Mining method**

- **Pounds of sulfur/million Btu**