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## Nebraska Mineral Operations Review, 1976

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NEBRASKA MINERAL OPERATIONS REVIEW, 1976

R. R. Burchett and G. R. Svoboda

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June 1977

Nebraska Geological Survey  
Conservation and Survey Division  
Institute of Agriculture and Natural Resources  
The University of Nebraska-Lincoln

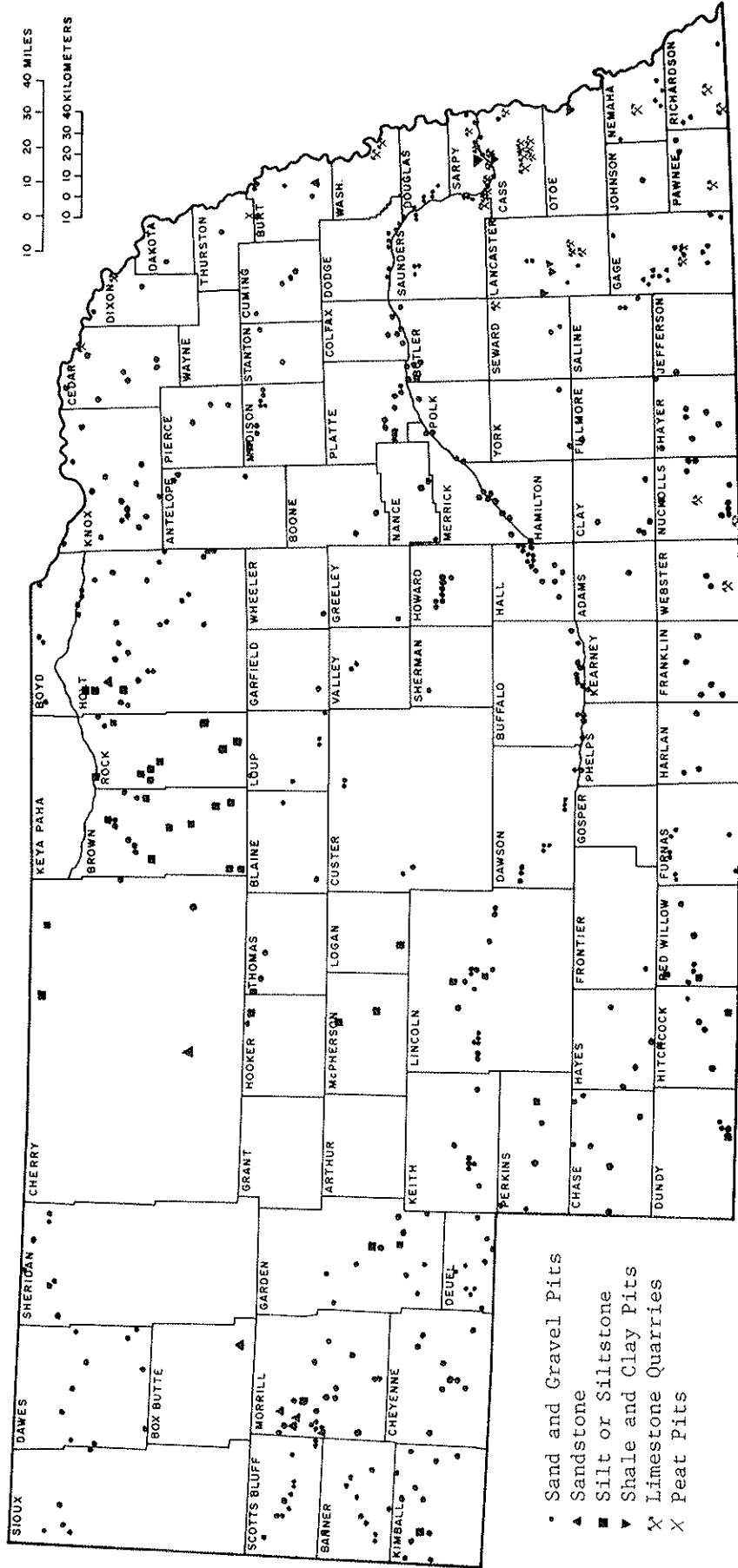
A total of 2,966 quarries, pits, and mines have been active at various times over approximately the last 50 years in Nebraska (table 1). Of this number, 361 were limestone quarries; 2,435 sand, gravel, and silt pits; 24 clay or shale pits; 83 sandstone pits; 11 quartzite pits; 29 volcanic ash pits; 14 coal mines; 1 chalk mine; 3 flint quarries; and 5 peat pits. These operations have disturbed about 33,000 acres, of which approximately one-third have been reclaimed.

During 1976, there were active in Nebraska 42 limestone quarries; 596 sand, gravel, and silt or siltstone pits; 8 clay or shale pits; 22 sandstone pits; and 1 peat pit. These 669 mining operations disturbed 663 acres and restored 161 acres during the year. The locations of these quarries, pits, and mines are shown in figure 1.

The Nebraska Oil and Gas Conservation Commission reports that 1,291 wells produced 6,181,500 barrels of oil and 17 wells produced 5.2 billion cubic feet of gas during 1976. Locations of the oil and gas fields are shown in figure 2. Of the 369 drilling permits issued by the commission during the year, 202 were for exploration, 144 for development, 23 for water disposal wells. The largest number of exploration and development wells completed occurred in Kimball County, followed by Hitchcock, Cheyenne, Banner, Morrill, and Red Willow counties.

Current information collected by the Conservation and Survey Division (Nebraska Geological Survey), the U.S. Department of Agriculture (Soil Conservation Service), and the Nebraska Department of Roads (Materials Division) has been compiled and placed on open file at the office of the Conservation and Survey Division, 113 Nebraska Hall, 901 North 17th Street, Lincoln, Nebraska.

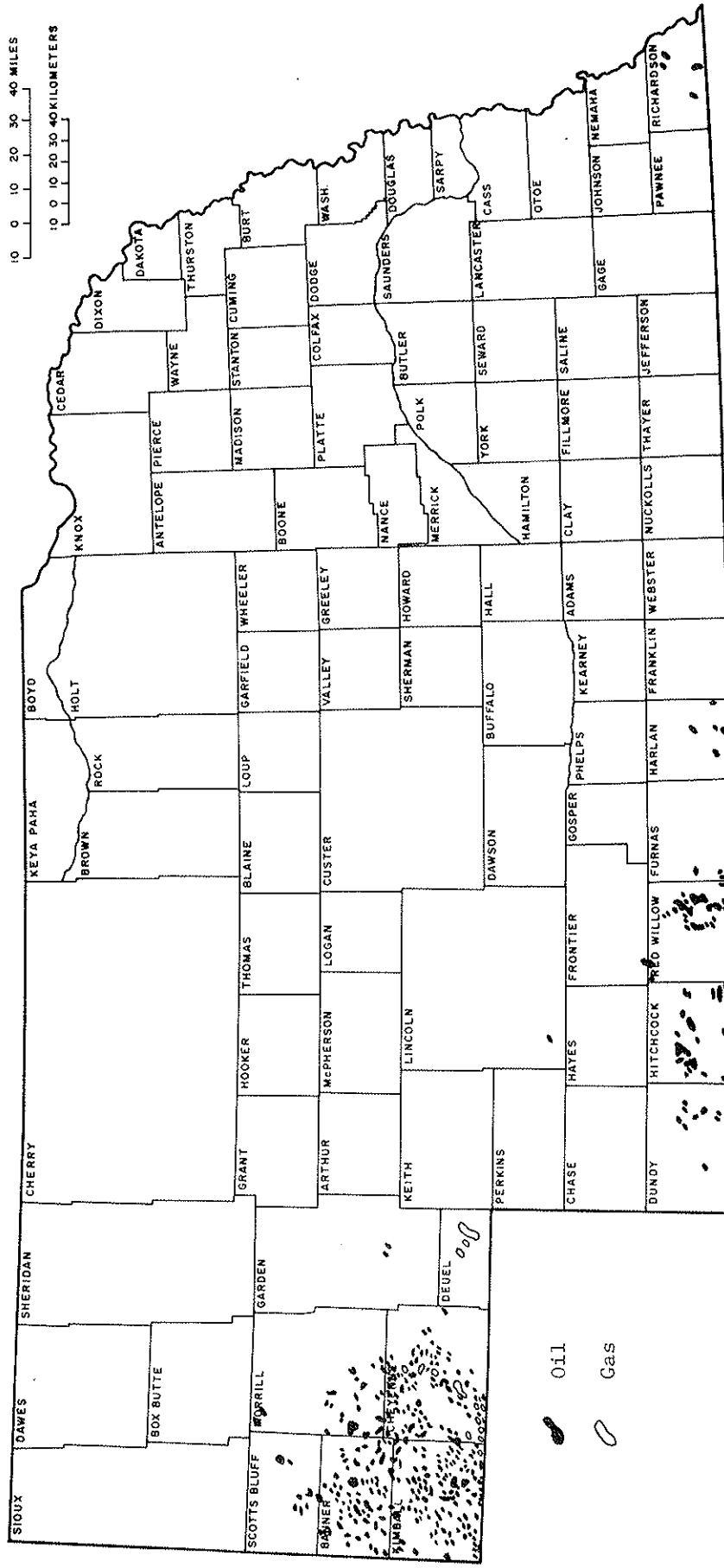




LOCATION OF ACTIVE QUARRIES, PITS, AND MINES IN NEBRASKA  
 JANUARY 1, 1977

Figure 1

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 Conservation and Survey Division  
 Institute of Agriculture and Natural Resources  
 University of Nebraska-Lincoln



LOCATION OF ACTIVE OIL AND GAS FIELDS IN NEBRASKA  
 JANUARY 1, 1977

Figure 2

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 Institute of Agriculture and Natural Resources  
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## Role of Minerals in State Economy

Few Nebraskans live a single day without using raw mineral products or materials manufactured from, processed by, fertilized with, or in some other way affected by minerals or mineral products. Unlike some natural resources, minerals are not renewable.

The value of mineral production during 1976--\$126.5 million--was the highest annual value in Nebraska's history (figure 3). About 1,700 people are employed by the mining industry in Nebraska, the greater number working in the counties with the largest mineral production value. The 1976 mineral production of Nebraska, as reported by the U.S. Bureau of Mines, follows:

Table.--Preliminary data on mineral productions<sup>1/</sup> in Nebraska during 1976

	Quantity	Value (thousands)
Clay-----thousand short tons---	209	\$ 462
Gem Stones-----	NA	10
Sand and gravel-----do-----	13,523	23,665
Stone-----do-----	3,848	10,405
Crude petroleum-----thousand 42-gallons barrels---	5,926	57,897
Natural gas-----million cubic feet---	2,552	1,587
Other (combined production values that cannot be disclosed individually; includes lime, cement, natural gas liquids)-----	-----	<u>32,504</u>
Total-----	-----	\$126,530

<sup>1/</sup> As measured by mine shipments, sales, or marketable production (including consumption by producers). NA - Not available.

# VALUE OF OIL AND GAS AND TOTAL MINERAL PRODUCTION IN NEBRASKA

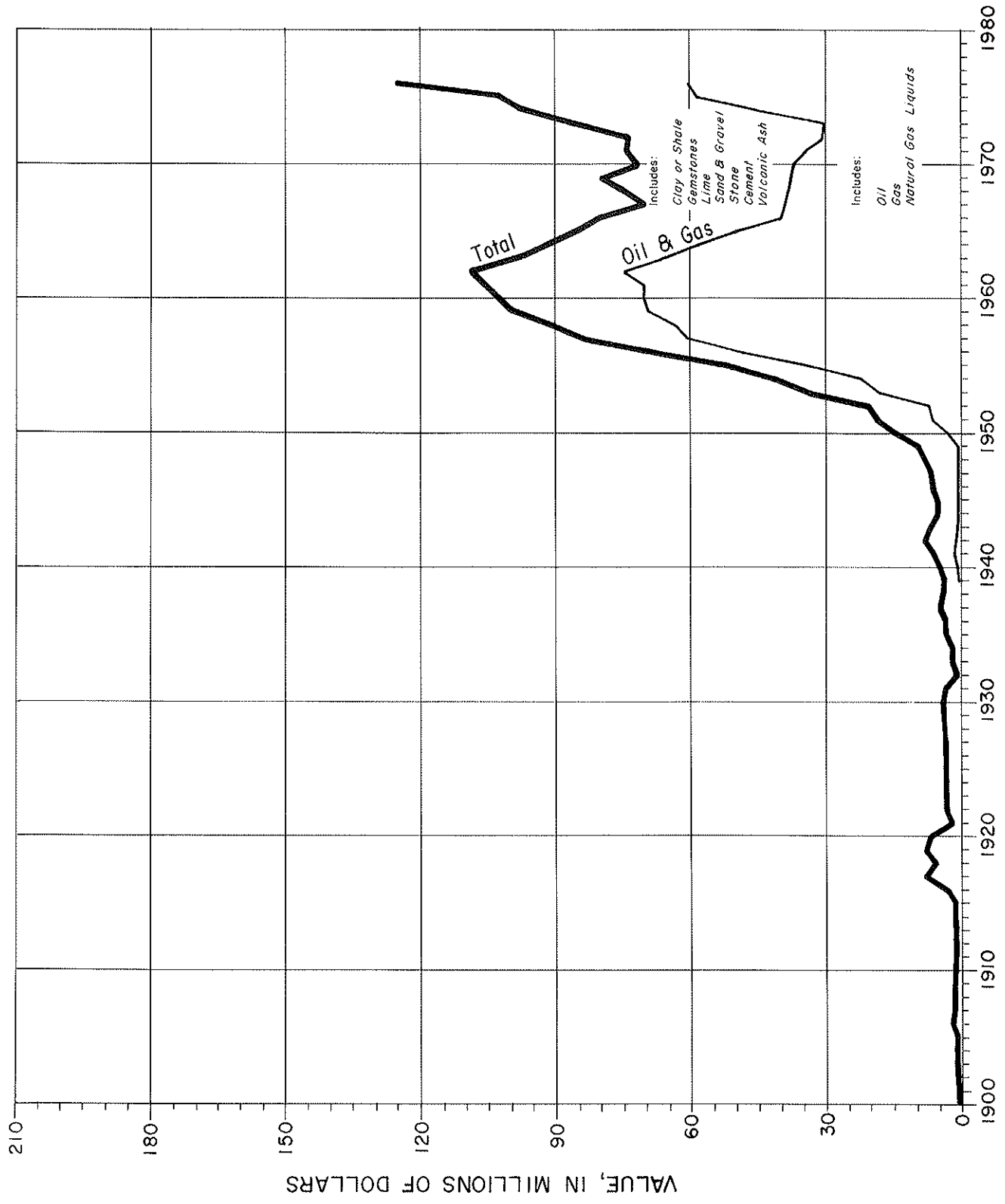
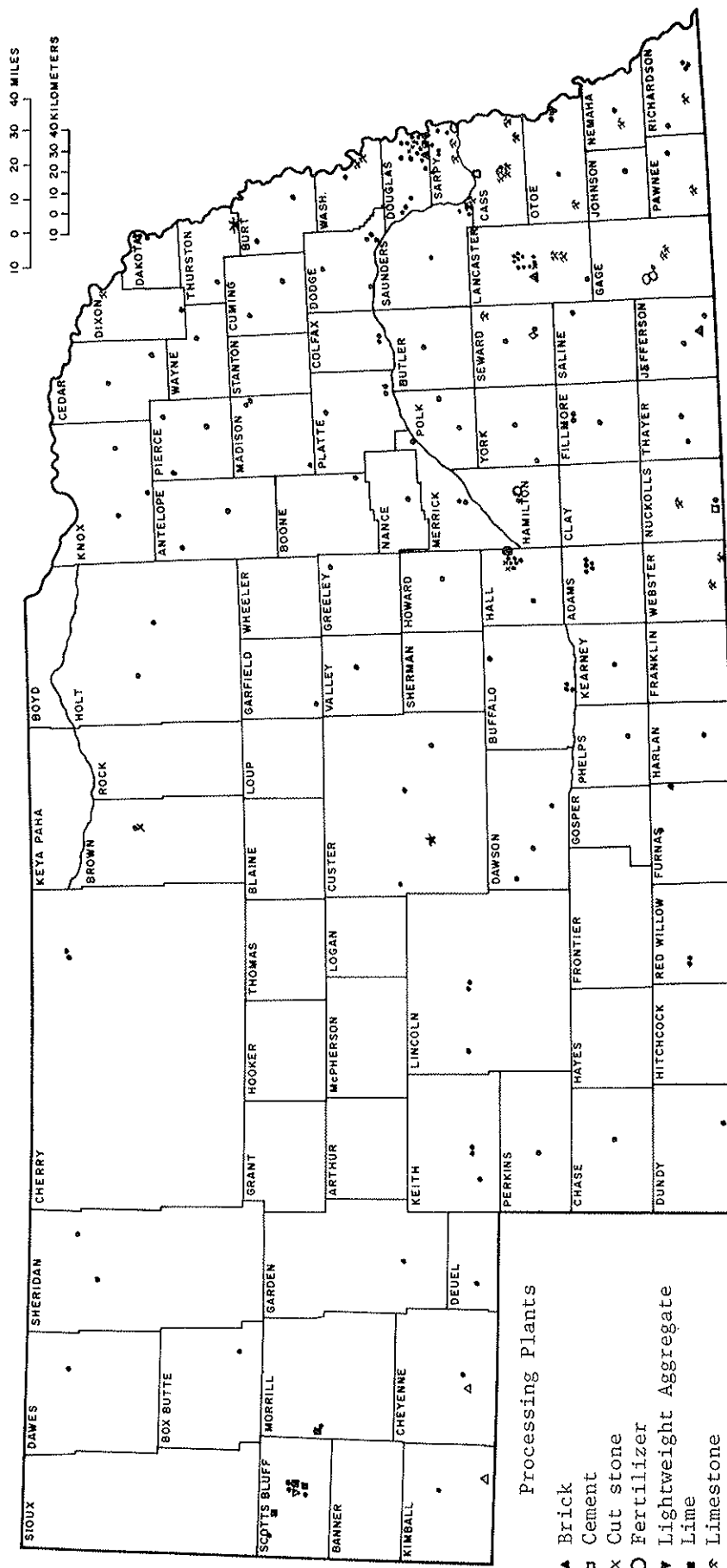


Figure 3





LOCATION OF MINERAL-RESOURCE PROCESSING PLANTS IN NEBRASKA  
 JANUARY 1, 1977

Figure 4

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 Nebraska Geological Survey  
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### Mineral Resource Trends

The mineral industry in Nebraska, like other industries in the state, is affected by such factors as growing demand due to population increase, changing rates of new construction, deflation and inflation of the currency, and depletion of reserves.

The National Planning Association's projected median growth rate of 4.5 percent for total new construction was used in making the following predictions of demand for nonmetallic minerals in Nebraska:

<u>Year</u>	<u>Clay</u> (including cement) (Tons per year)	<u>Sand and gravel</u> (Tons per year)	<u>Limestone</u> (including cement) (Tons per year)
1980	214,000	18,000,000	7,000,000
1985	266,000	23,000,000	8,500,000

Unless significant oil and gas reserves are discovered in Nebraska, oil production will decline about one million barrels per year and gas production will decline about 500,000,000 cubic feet per year.

The following mineral resources occurring in Nebraska may have potential for development: gypsum, coal, uranium, potash, salt, bentonite, diatomaceous earth, and ores containing rare earth elements.

### Mineral Resource Industries

Industrial plants manufacturing products from mineral resources are scattered throughout Nebraska. These plants, whose locations are shown in figure 4, are discussed below:

Agricultural Lime Plants. Three firms produce agricultural lime exclusively. They are located near Garland in Seward County, near Nelson in Nuckolls County,

and near Ponca in Dixon County. Most crushed limestone plants, largely in southeast Nebraska, produce some agricultural lime.

Brick Plants. Three firms produce brick in Nebraska: Endicott Clay Products Company near Endicott in Jefferson County; Yankee Hill Brick Manufacturing Company near Lincoln in Lancaster County; and Omaha Brick Works near Ralston in Douglas County. Common and face brick are the main products of these plants.

Cement Plants. Cement is produced by Ash Grove Cement Company near Louisville in Cass County and by Ideal Cement Company near Superior in Nuckolls County. Limestone, shale, and gypsum are the chief raw materials used in cement manufacture.

Concrete Products Plants. Many plants across the state produce concrete products such as block, brick, precast and prestressed slabs and construction beams, tile, pipe, vaults, septic tanks, steps, feed bunks, and bunker silos.

Crushed Limestone Plants. There are 20 crushed limestone plants in the eastern third of Nebraska. Principal producers are Fort Calhoun Stone Company, Hopper Brothers Quarries, and Kerford Limestone Company. Cass and Washington counties are the leaders in production. Crushed limestone is used for aggregate in concrete, cement manufacture, road base, riprap, agricultural lime, wallstone, and mineral fillers.

Cut-Stone Plants. Stone imported from other states is cut by six firms. Two of these firms are near Grand Island in Hall County, one is near Lincoln in Lancaster County, and three are near Omaha in Douglas County.

Fertilizer Plants. Producers of ammonia, urea, and ammonium nitrate include Allied Chemical Company at La Platte in Sarpy County; CF Industries, Inc., at Fremont in Dodge County; and Phillips Chemical Company at Beatrice in Gage County. The Farmland Industries, Inc., plant at Hastings in Adams County produces ammonia. Ammonium nitrate is produced by Cominco-American, Inc., in Beatrice.

Gem and Ornamental Stone Plants. Many small firms around Nebraska cut and polish gems and ornamental stones such as agate, quartz, jasper, chalcedony, chert, and petrified wood.

Glass Plants. Several firms around the state manufacture items from glass produced in other states.

Ground Limestone Plants. Three firms in Nebraska produce finely ground limestone (calcium carbonate) for feed supplements and fillers for cement, paint, and rubber. Kerford Limestone Company and American Cyanamid Company are west of Weeping Water in Cass County, and the United Mineral Products Company is southeast of Weeping Water.

Lightweight Aggregate Plants. Expanded shale (lightweight aggregate) is produced at only one plant in Nebraska. Located near Nebraska City in Otoe County, this plant is operated by Western Aggregate Company. The material is used for aggregate in lightweight block and other construction purposes.

Lime Plants. Great Western Sugar Company produces lime from limestone imported from their quarry in Wyoming. Limekilns are located at Scottsbluff, Gering, and Mitchell in Scotts Bluff County, and at Bayard in Morrill County. The lime is used mainly for sugar refining.

Natural Gas Processing Plants. Two natural gas processing plants are located in Nebraska. One, south of Kimball in Kimball County, is operated by Cities Service Oil Company. The other, west of Sidney in Cheyenne County, is operated by Marathon Oil Company. Production from these two plants includes natural gasoline, cycle products, liquid petroleum gases, and ethane.

Oil Refineries. Only one refinery remains in Nebraska. It is near Scottsbluff in Scotts Bluff County and is operated by CRA, Inc. Production includes natural gasoline and cycle products.

Peat Plants. Nebraska's only plant to produce peat is the Blackbird Peat Moss and Potting Soil Company near Decatur in Thurston County. The product is sold mainly for potting soil and other horticultural needs.

Perlite Plants. The Zonolite Division of W. R. Grace & Company is the sole manufacturer of expanded perlite. At its plant near Omaha in Douglas County, crude perlite imported from other states is expanded and sold as aggregate for plaster and concrete, horticultural purposes, and filler material.

Pottery Plants. Pottery produced by the Kaly Kraft Pottery Company of Milford in Seward County is sold as art objects and souvenirs.

Ready-Mix Concrete Plants. A total of 135 ready-mix concrete plants located throughout the state produce wet cement for construction purposes. Some of these plants also manufacture cured concrete products.

Sand and Gravel Plants. All but three of Nebraska's counties produce sand and gravel. Douglas and Saunders counties are the leading producers. Among the largest producers are Central Sand and Gravel Company in Butler, Madison, Pierce, and Platte counties; Hartford Sand and Gravel Company in Douglas and Dodge counties; Lyman-Richey Sand and Gravel Corporation in Cass, Dodge, Douglas, Morrill, Platte, Sarpy, and Saunders counties; and Western Sand and Gravel Company in Sarpy and Saunders counties.

Talc Plants. Cyprus Mines Corporation, United Sierra Division's plant near Grand Island in Hall County, is the only producer of ground talc in Nebraska. The unground talc is obtained from outside the state. The product is used in paper, ceramics, rubber, paint, insecticides, textiles, and toilet articles.

Vermiculite Plants. The only producer of exfoliated vermiculite is the W. R. Grace & Company, Construction Products Division, near Omaha in Douglas County. Montana is the source of crude vermiculite. The expanded product is used principally for insulation, concrete aggregate, and fire proofing.

Volcanic Ash Plants. The La Rue Axtell Pumice Company plant near Callaway in Custer County is the only producer of volcanic ash in the state. It operates only periodically. The ash is processed for use in abrasives, scouring compounds, dental work, and filler material.