

FOREWORD

Since its creation by the Congress in 1910, the Bureau of Mines has fostered prudent exploitation of our mineral and mineral-fuel resources. Even though the United States has abundant reserves of solid fuels, sufficient to last many centuries with wise use of present reserves, it is recognized that development of our lower rank fuels in the vast untapped reserves of the North Central States will greatly enhance our mineral wealth.

Lignite as a source of fuel and chemical materials has long been regarded as an important asset to the Nation's economy. As the reserves of the higher rank coals of the Appalachian region are eventually depleted, large quantities of lower rank coals will be required to maintain our position of leadership in the industrial world. In view of this, the Bureau of Mines has been conducting investigations to develop more efficient methods of utilizing our vast reserves of lignitic coals. One notable accomplishment in this direction is the construction of a large Texas power plant, in which it is planned to employ lignite char as fuel for power generation.

This char manufacturing process with its accompanying valuable tars is the outgrowth of a process developed by the Bureau of Mines at its Denver Station. In 1951, construction of the Bureau's Charles R. Robertson Lignite Laboratory was completed at Grand Forks, N. Dak. It is anticipated that the major lignite projects of the Bureau will be conducted at this laboratory in cooperation with industry and the various Government agencies.

This report is composed of two parts; part 1 covers the technology of European lignitic coal, statistics on production and costs of North Dakota lignitic coals, their occurrence and properties, mining, preparation, storage, and transportation; part 2 covers the utilization of lignite. Owing to the broad field discussed, it was necessary that contributions of a number of Bureau authors be assembled and integrated to facilitate the final product. A major portion of the work emanated from the Bureau's lignite laboratory at Grand Forks, N. Dak., under the guidance and authorship of Robert McMurtrie, chief of the Lignite Branch of that station, and under the general supervision of J. Daniel Lankford, chief, Fuels Technology Division, Region V, Minneapolis, Minn. Significant contributions were made by Walter H. Oppelt, Robert C. Ellman, Edward F. Golob, Gordon H. Gronhøvd, Jerome J. Hoepfner, Jr., Theodore W. Kamps, Jr., Wayne R. Kube, and Alfred Traverse.

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