

SUMMARY OF RESEARCH PROJECT CONTRACTS FOR BENEFICIATING LOW-GRADE
MANGANESE ORES AND SLAGS

- (1) *Contract No. DMP-35: Southwestern Engineering Company—Net Cost, \$250,000.*—This was on domestic wad and other low grade manganese ores. Extensive analyses and ore tests were made on each ore. Flotation possibilities were principally studied, gravity and sink-float methods as well as leaching tests were performed. Contractor reported none of the ores tested were amenable to upgrading to metallurgical grade by physical methods alone. More research using chemical methods needed. Possibly preconcentration by physical methods would prepare material for final upgrading by chemical (leaching) methods.
- (2) *Contract No. DMP-24: Mangaslag, Inc.—Net Cost, \$1,266,000.*—Prometallurgical process, reduction of ore in a vertical blast furnace. Pilot plant using new process devised by BuMines for producing ferromanganese from open hearth slags, and possible Aroostook ores. The project was unsuccessful.
- (3) *Contract No. DMP-16: Manganese Chemical Corp.—Net Gain, \$64,000.*—Combined roasting and leaching. Contract provided for pilot plant to be built to test new Carbamate (Dean-Leute) Process for extracting manganese from manganiferous iron ores of the Cuyuna Range, Minnesota. Contract originally called for basic product of manganese carbonate which could be readily converted to manganese oxide in nodules for use in the steelmaking industry; also the basic product (manganese carbonate) was to be used in the chemical industry and in the production of electrolytic manganese dioxide. Apparently successful and economically feasible.
- (4) *Contract DMP-86: Nossen Laboratories, Inc.—Net Cost, \$499,000.*—Construct and operate pilot plant for extracting manganese from low grade (Aroostook ores). Contractor's process of roasting, leaching, grinding and washing to give a high grade manganese dioxide concentrate. This process appeared technically feasible but not economic.
- (5) *Contract No. DMP-103: L. W. King—Net Cost, \$29,000.*—Contract for testing process owned and developed by contractor. Process to treat certain low grade ores for recovery of manganese, cobalt and nickel separately. Ore exists in various widely scattered places in United States. Process includes roasting and leaching with hydrochloric acid. This process was not considered technically competent.
- (6) *Contract No. DMP-23: The Minerals and Metals Advisory Board of the National Research Council, National Academy of Sciences.—Net Cost, \$352,000.*—Contract for services covering study, appraisal and monitoring of minerals and metals technical problems.
- (7) *Contract No. DMP-117: U.S. Bureau of Mines—Net Cost, \$4,000.*—Contract for services of testing and assaying.
- (8) *Contract No. DMP-110: Ores Beneficiation, Inc.—Net Cost, \$252,000.*—Research to determine the technical and economic feasibility of a beneficiation process for low-grade manganese ore.
- (9) *Contract No. DMP-111: Singmaster & Breyer—Net Cost, \$31,000.*—Service contract—technical services covering a report on factors pertinent to continuation of manganese recovery project.
- (10) *Contract No. DMP-121: Battelle Memorial Institute—Net Cost, \$18,000.*—Research Contract covering a review of the Nossen process for the recovery of manganese from low grade domestic ores.
- (11) *Contract No. DMP-130: Vitro Corporation of America—Net Cost, \$271,000.*—Research contract to test and evaluate the Hi-arc process for recovering manganese from complex siliceous ores.
- Total cost of research projects, \$2,908,000.

Chairman PATMAN. Mr. Gettys?

Mr. GETTYS. Thank you, Mr. Chairman.

Governor, talking about strategic materials and classifications, I wonder if you classify yourself as a southerner or westerner? You don't have to answer that question.

Mr. DANIEL. Both.

Mr. GETTYS. Governor, I notice that in this proposed legislation you request an extension of the act for 2 years. Is that long enough?