

geomagnetic surveys, which have ranged over the whole of Canada and across the Atlantic to Scandinavia. In addition, the Branch maintains a network of ten permanent geomagnetic observatories, as well as temporary observatories in summer at many widely distributed sites. It also operates a network of 23 seismic stations to assist in the study of the earth's interior and to obtain data for its quantitative assessment of seismic risk throughout Canada. In gravity research, another means of studying the composition of the earth's crust, the Branch is systematically mapping variations in the earth's gravity on a regional basis throughout Canada, including the Arctic and the floors of the Gulf of St. Lawrence and Hudson Bay. The results of all gravity measurements to the end of 1966 are available in a new gravity map of Canada on a scale of 1:5,000,000 or about 80 miles to the inch, for easy comparison with the new geological and tectonic maps of Canada on a similar scale.

No mineral development is possible without accurate, large-scale topographical maps. The Surveys and Mapping Branch, in conjunction with the Mapping and Charting Establishment of the Department of National Defence, has completed the topographical mapping of the country at the medium scale of 1:250,000, or about four miles to the inch. About 40% of the larger-scale mapping at 1:50,000 has been completed in the more settled areas and areas of greater economic importance.

The Mineral Development Sector is composed of the Mineral Resources Branch and the Explosives Division. The Explosives Division is responsible for the administration of the federal Explosives Act which is primarily an Act of public safety to control the manufacture, authorization, storage, sale, importation and transportation by road of explosives.

The Mineral Resources Branch is responsible for resource-economic research, program development and policy formulation in the field of non-renewable resources. It conducts fundamental and applied resource-engineering-economic research and field investigations into non-renewable resource problems, policies and programs on a commodity or total industry basis, in a regional, national and international context. The work covers all aspects of the mineral industry from resources through exploration, development, production, processing, transportation and consumption. On the basis of this work, the Branch publishes resource-engineering-economic reports and advises government departments and agencies on non-renewable resource policy matters. Current activities include regional studies of the mineral economy of a number of areas in Canada; assessment of mineral projects in various parts of Canada for which federal support has been requested; mineral resource and mineral reserve studies in a number of mineral commodities, including the mineral fuels, uranium and coal; and the safeguarding of Canadian mineral interests through participation in international agencies such as the United Nations Lead-Zinc Study Group, the Economic Commission for Europe, the Committee on Natural Resources on the Economic and Social Council, and the International Tin Council. The Branch administers the Emergency Gold Mining Assistance Act as a means of aiding mining communities largely dependent upon the gold mines. In collaboration with the Canadian International Development Agency and with the support of industry, the Branch is setting up training courses for mineral scientists, technologists and economists brought to Canada under the various aid programs, and is advising on mineral projects undertaken by Canada as an aid to developing countries. The Branch publishes an extensive series of reports and other material, and maintains the Mineral Occurrence Index, which is a listing of about 14,000 mineral showings and deposits in Canada that may be consulted by anyone interested.

The Energy Development Sector is discussed in more detail in Chapter 13, Section 13.1.1, but because of the wide range of interests of this primarily policy-making group and the direct impact of some of its activities on the mining industry, some specific areas of assistance are considered here. The Sector studies and assesses individual projects and developments relative to each of the energy sources and in terms of interrelationships with other energy sources. It appraises trends in oil and gas exploration and production, transportation, processing and marketing in Canada and on an international scale, and provides information to federal government agencies, industry and the general public on oil and gas developments in Canada and abroad. In the field of uranium, the Sector continues to co-ordinate uranium matters on such subjects as stockpile programs, possibilities of the establishment of uranium-enrichment facilities in Canada and export opportunities. With respect to coal, in addition to its wider role it provides assistance in the form of research and development grants to help improve the quality and utilization of coal, and provides advice on production expansion rates compatible