

Part II

DETAILED DISCUSSION

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Chapter 1: Analysis of the Existing Data

1-1 Summary of the Collected Data

1-1-1 Scientific Documents and Research/Survey Materials

Collected papers, documents and materials are arranged as “References”.

The main scientific documents and research/survey materials collected to evaluate PGE mineralization of Paraná flood basalt are as follows:

- The documents and research materials discussing igneous activity of Paraná flood basalt from the viewpoint of petrologic study
- The documents and research materials examining geophysical data on magnetism, gravity and terrestrial heat flow related to the generation of Paraná basin and the activity of Paraná flood basalt
- The documents and research materials containing petrologic studies of flood basalt, its igneous activity and cause of its generation related to the flood basalt distributed worldwide such as Deccan, Columbia River and Noril'sk
- The documents and research materials concerning generation of Noril'sk ore deposit and its PGE mineralization
- The documents and research materials concerning nickel and PGE ore deposits and mineralization related to large-scale basaltic magma activity such as flood basalt
- Materials and data on the coal exploring enforced in the half of 1980s by DNPM and CPRM concerning the districts where sediments were distributed on the out of east edge of Paraná flood basalt (see Fig. II-1-1-2 for the scope of the survey)
- The report and data of the survey to evaluate PGE mineralization jointly conducted by Geological Survey of Canada and CPRM for lava and intrusive rocks in the eastern edge of Paraná flood basalt and jointly conducted by DNPN and CPRM on the drilling core for coal exploring
- Geochemical survey data on stream sediments conducted by MINEROPAR in Paraná Province

1-1-2 Topographic Map

Fig. II-1-1-1 shows the index map of the topographic maps on a scale of 1:500,000.

In Brazil, the army manages topographic maps. Since the topographic maps of the survey area are controlled by the army offices located in Porto Alegre, São Paulo and Brasília, it is necessary to visit these army offices to obtain all the maps concerned.

1-1-3 Geological Map

Fig. II-1-1-2 shows the index map of the copied geological maps on a scale of 1:100,000.

The major geological maps of the survey area are the map on the scale of 1:2,500,000 made by MERCOSUR to be completed and published at the end of 2001, the geological map of the individual province prepared by DNPM and MINEROPAR, the geological map on a scale of 1:100,000 prepared by DNPM and CPRM during their coal survey and the geological map on a scale of 1:250,000 prepared by CPRM during the survey of water resources conducted in 1970s.

1-1-4 Aeromagnetic Data

Fig. II-1-1-3 shows the scope of the analysis results on aeromagnetic data provided by CPRM.

The aeromagnetic data were collected from the data possessed by CPRM, and were analyzed and printed by the branch office of CPRM in Porto Alegre.

1-1-5 GIS Data

Fig. II-1-1-4 shows the scope of GIS (Geographical Information System) data provided by CPRM.

GIS data are summarized for each range of 4° from north to south and 6° from east to west, consisting of the data on topography (contour lines), drainage systems, traffics (roads and airways) and urban districts. GIS data prepared on the basis of UTM and decimal degree can be used on Arc View of Environmental Systems Research Institute Inc (ESRI Inc.).

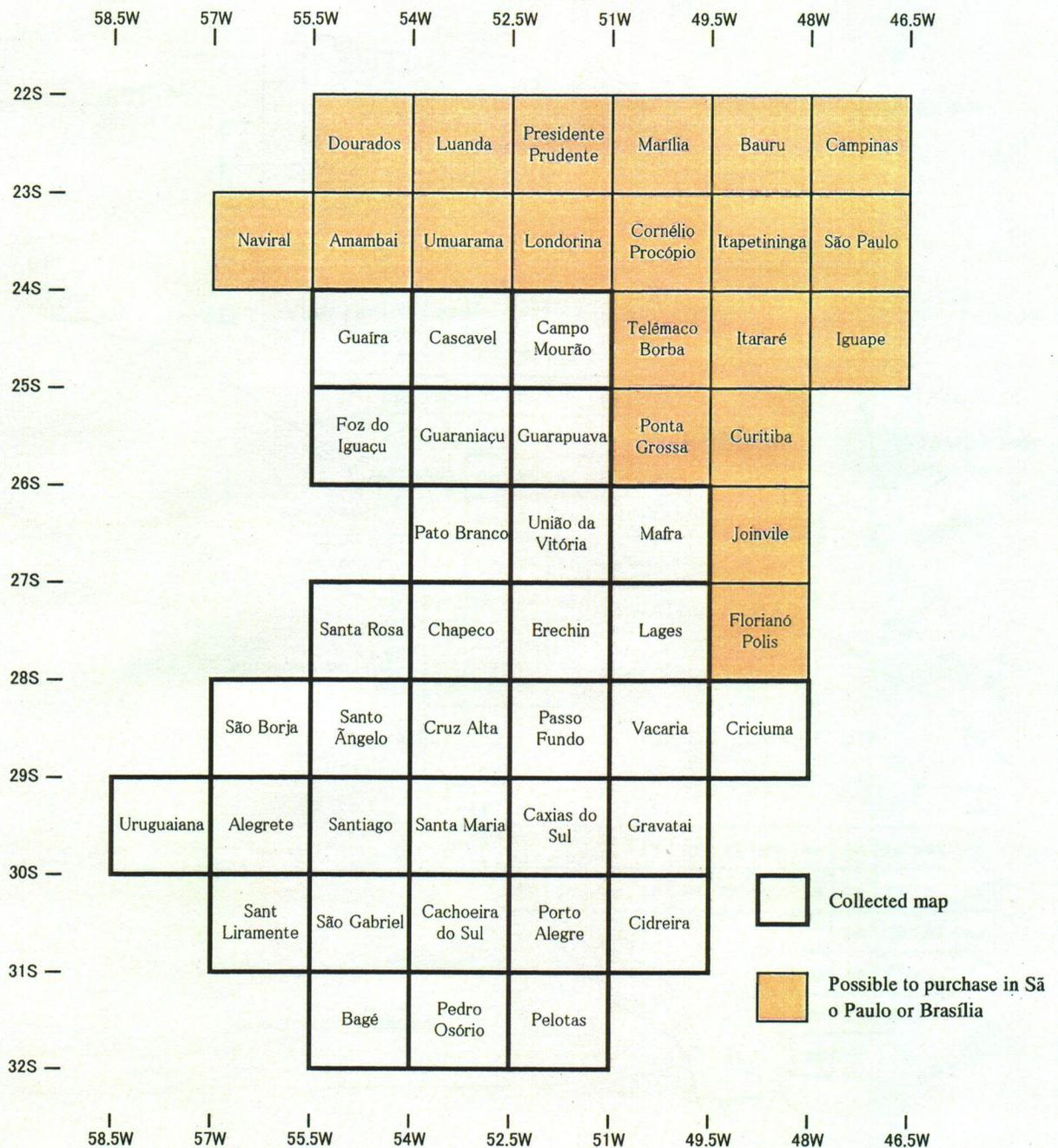


Fig. II-1-1-1 Index map of the topographic maps on a scale of 1/500,000 in the survey area

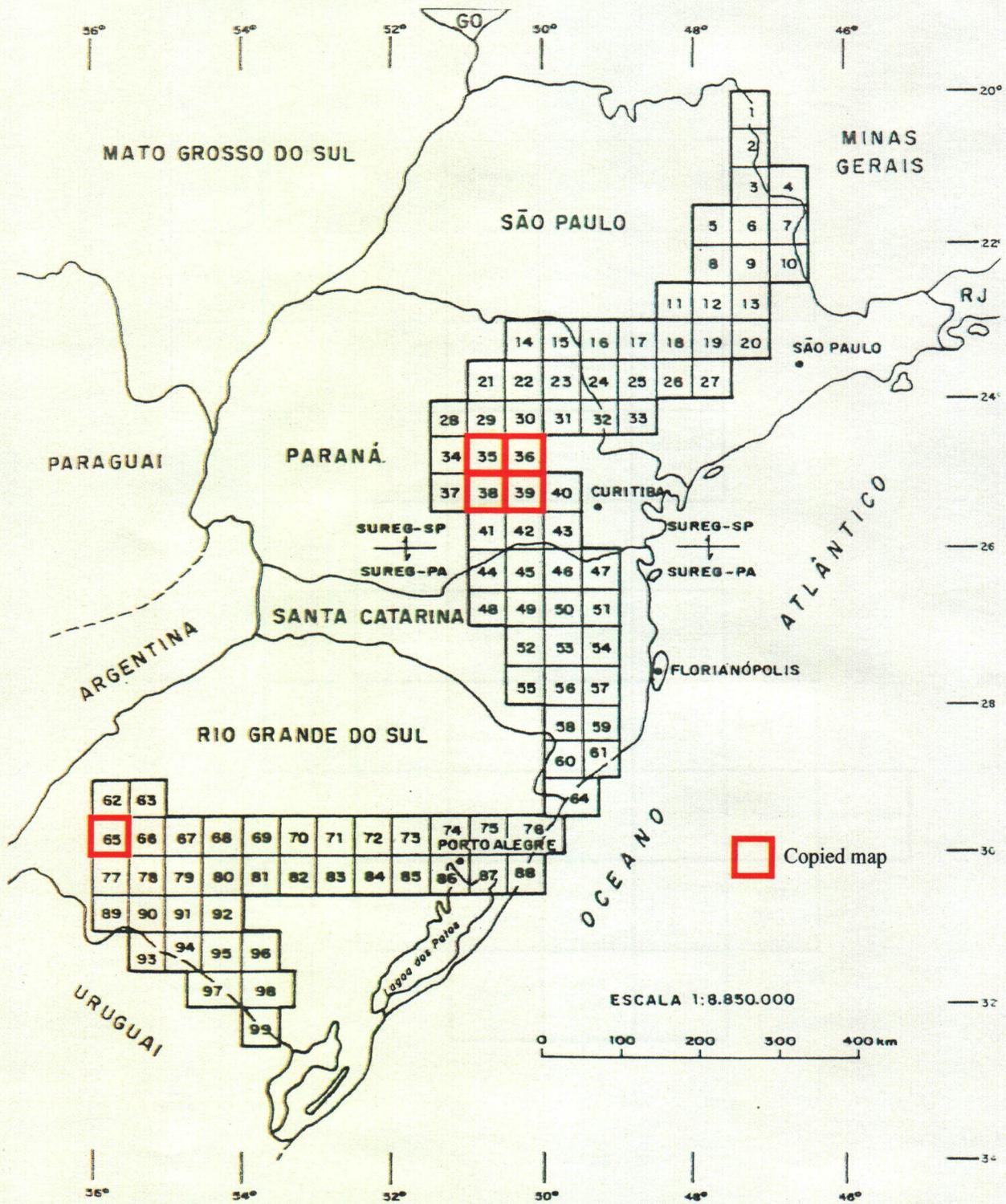


Fig. II-1-1-2 Index map of the geological maps on a scale of 1/100,000 made by DNPM - CPRM

PROJETOS AEROGEOFÍSICOS EXECUTADOS PARA A PETRÓLEO
BRASILEIRO S.A. - PETROBRAS, INCLUSIVE CONTRATOS DE RISCO

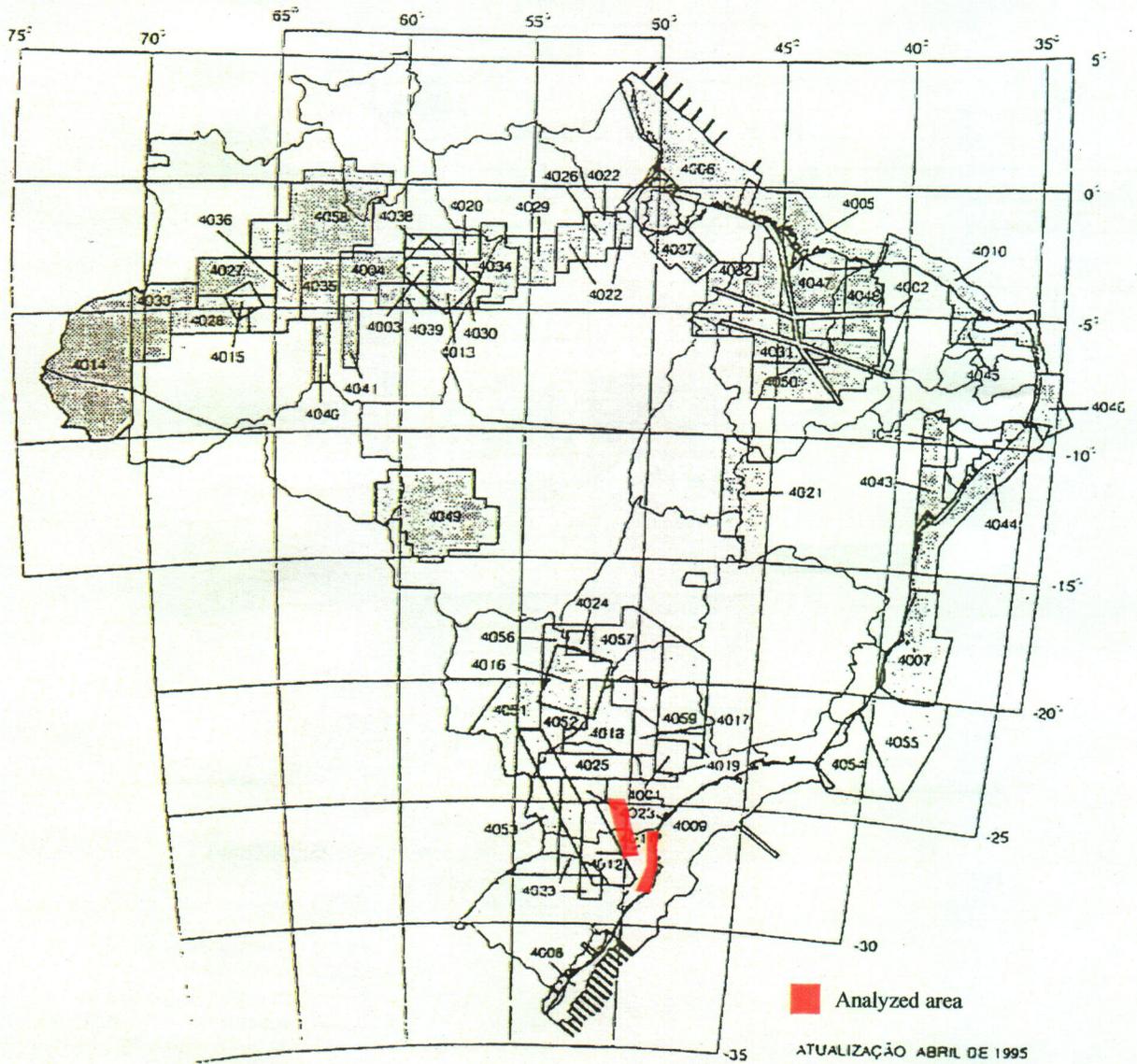


Fig. II-1-1-3 Index map of the airborne magnetic survey