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INTERNATIONAL URANIUM RESOURCES EVALUATION PROJECT

I U R E P

NATIONAL FAVOURABILITY STUDIES

NICARAGUA

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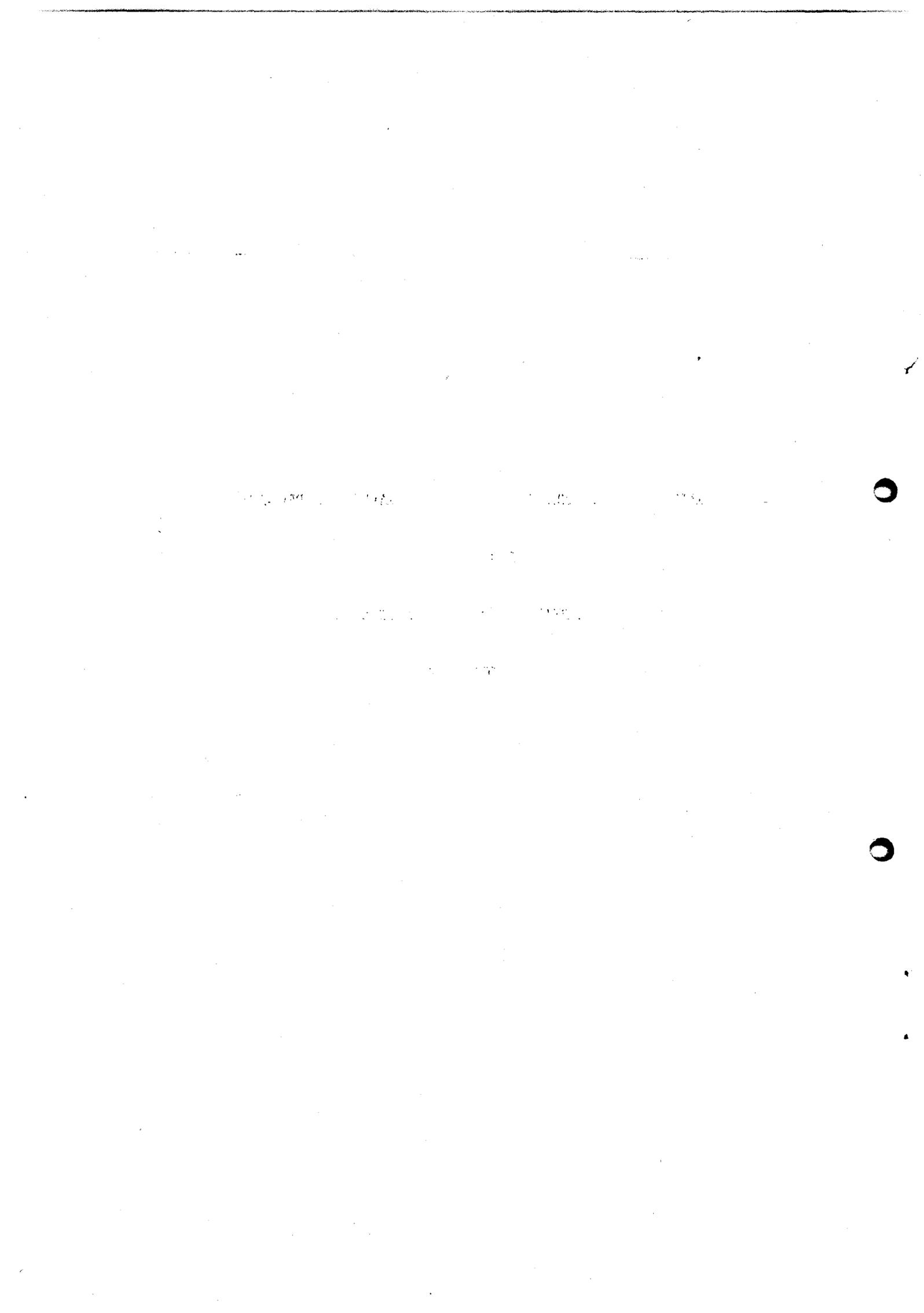
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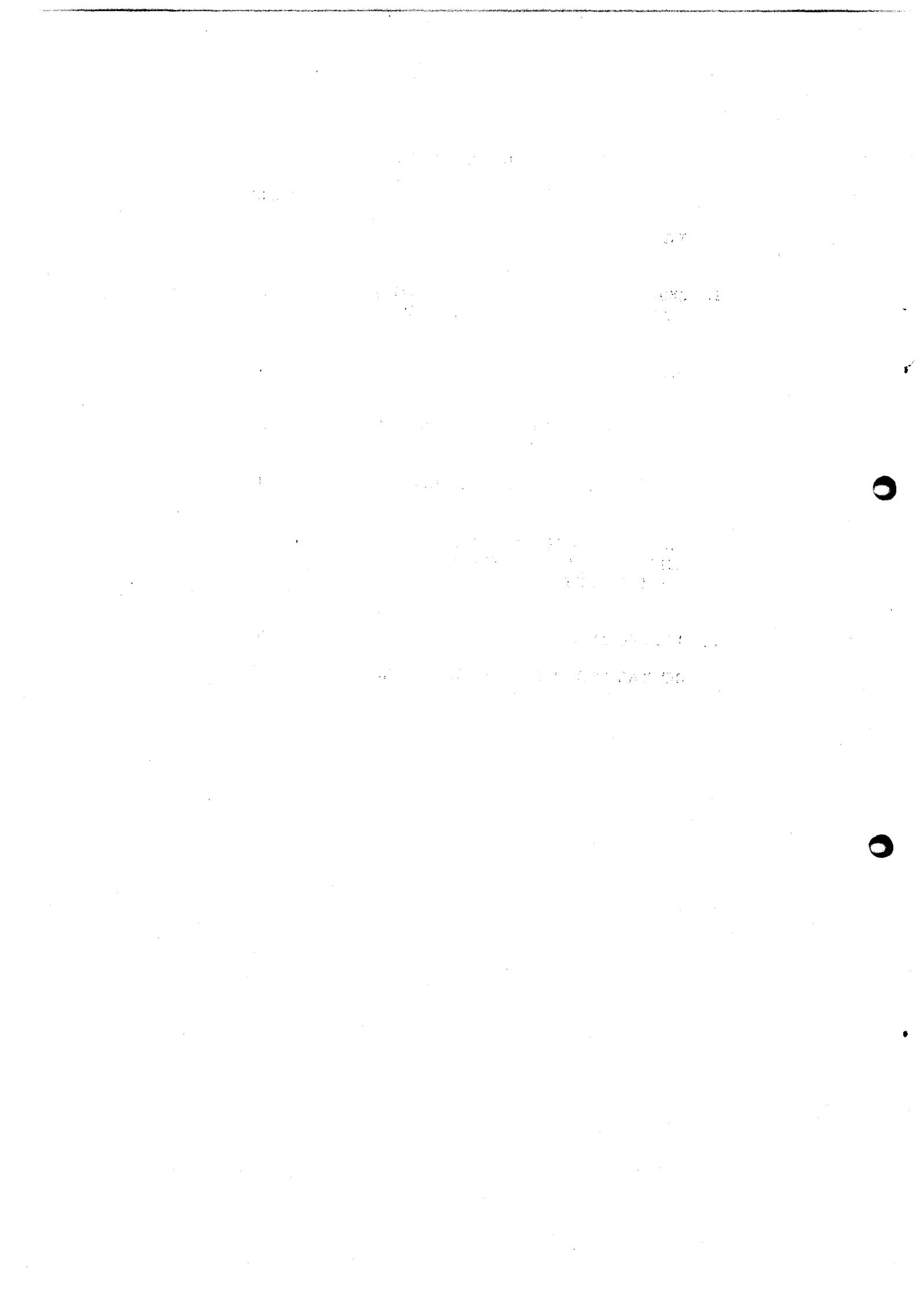
NATIONAL FAVORABILITY STUDIES

NICARAGUA



C O N T E N T S

	PAGE
1. INTRODUCTION	1
2. GEOLOGY IN RELATION TO POTENTIALLY FAVORABLE URANIUM-BEARING AREAS	1
3. PAST EXPLORATION	2
4. URANIUM OCCURRENCES AND RESOURCES	2
5. PRESENT STATUS OF EXPLORATION	3
6. AREAS FAVORABLE FOR URANIUM MINERALIZATION AND POTENTIAL FOR NEW DISCOVERY	3
7. BIBLIOGRAPHY	3
GENERAL GEOLOGIC MAP OF NICARAGUA	



1. INTRODUCTION

(a) Geography

Including its lakes, Nicaragua has an area of 148,000 square kilometers. The capital is Managua. The country's well-populated Pacific Highlands and Great Rift Valley contain wide plains, volcanoes and isolated upland blocks; on the rift floor are two large lakes, Managua and Nicaragua. The Central Highlands, composed of volcanic ridges and plateaus, has elevations to 2,134 meters. A large part of the Caribbean lowlands and eastern highlands is uninhabited and consists mostly of tropical rain forest, swamps and jungle. Isolated settlements have been established at river mouths on the Caribbean coastal plain. Earthquakes are common in Nicaragua, and there are occasional volcanic eruptions.

(b) Climate

The climate is primarily tropical with small areas of mild to cold temperatures at higher elevations. Rainfall is heavy but there is a dry season in the western portions and to a slight extent also in the eastern sector.

(c) Access

Over half of the 13,324 km. of roads are suitable for travel only in dry weather. A fairly good network has been built in western Nicaragua, including the Inter-American Highway of 384 km.; however, roads are very limited in the eastern half of the country. There are 530 km. of railway track although not all of it is being operated. The two major lakes, Nicaragua and Managua, are navigable, as are the Grande, Coco and San Juan rivers. Air transportation is available from 30 airfields, with international service through Las Mercedes airport near Managua.

2. GEOLOGY IN RELATION TO POTENTIALLY FAVORABLE URANIUM-BEARING AREAS

Nicaragua is divided into four physiographic provinces that coincide approximately with major geologic divisions. These are the Pacific Coastal Province, the Nicaragua Depression, the Interior Highlands and the Atlantic Coastal Plain.

The Pacific Coastal Province is composed of Quaternary and late Tertiary volcani-clastic deposits and marine sediments. It also includes a Cretaceous and Tertiary marine sedimentary sequence.

The Nicaragua Depression some thirty kilometers from the Pacific Coast is up to 80 kilometers wide and extends the entire length of the country parallel to the coast. It is underlain by unconsolidated pyroclastic deposits, ash flow tuffs and mud flow deposits, all of Quaternary age. The depression is the site of Quaternary volcanoes that are presently active.

The Interior Highlands are composed largely of Tertiary volcanics of the Upper and Lower Coyol Groups, which are of Upper and Mid-Miocene age respectively. The Upper Coyol Group is composed of basalts which underlie rhyolite ignimbrites. The Lower Coyol Group is composed of andesitic and basaltic lavas grading upward into andesite and dacite tuffs. The Coyol Groups overlie the Tertiary Matagalpa Group which consists of lavas and tuffs of basic to intermediate composition together with some rhyolite. Near Siuna, in the north, there are limestones (the Yojoa Limestone) of Cretaceous age. In this region copper mineralization is associated with granite intrusive rocks which reportedly contain alaskites. Beneath the limestones is a sequence of Jurassic continental redbeds known as the Todos Santos Formation. The oldest rocks in Nicaragua are in the Northern Highlands near the Honduras border. They are believed to be older than Lower Cretaceous, probably Paleozoic, and are intruded by Mesozoic plutons of granite to diorite composition. Mica schists and phyllites predominate.

The Atlantic Coastal Plain consists of Quaternary volcanic sediments which occasionally are interbedded with basalt flows.

Most of western Nicaragua is covered by recent volcanic ash which has buried nearly all the formations that might be considered favorable for uranium, and the eastern part is covered by jungle.

3. PAST EXPLORATION

On invitation of the Nicaraguan Government, the U. S. Atomic Energy Commission conducted a reconnaissance for uranium in March, 1953. Operating and abandoned mines, as well as prospects, formations, contacts, dikes and sills enroute to these mines were tested by scintillometer. Reconnaissance included two mineralized areas exposed in windows within the volcanic belt but did not include the schists and granitic intrusions in the northeastern part of the country. No anomalous radioactivity was detected.

4. URANIUM OCCURRENCES AND RESOURCES

No uranium occurrences were discovered during the 1953 reconnaissance and no uranium deposits or prospects are indicated on the metallogenetic map of Central America or in the bibliography of Nicaraguan geology.

5. PRESENT STATUS OF EXPLORATION

Information is not available on current exploration in Nicaragua.

All subsoil mineral resources besides quarry materials belong to the state. In the interest of national defense, uranium, thorium, lithium and their derivatives, along with certain other mineral substances, may be classified as "of temporary strategic interest", and their exploration or exploitation would then be subject to special laws. The Ministry of Economy may establish permanent or temporary national reserves on which mining activities are essentially precluded. Foreign nationals and corporations may acquire mineral concessions although particular regulations may be applicable to such an acquisition.

6. AREAS FAVORABLE FOR URANIUM MINERALIZATION AND POTENTIAL FOR NEW DISCOVERY

Exploration of any favorable formations has been hindered by volcanic ash cover in western Nicaragua and dense vegetation in the East. Little geologic work has been done on the Paleozoic metamorphic rocks or Todos Santos Formation of the Northern Highlands. These could possibly show some potential for discovery of uranium as might the alaskites near Siuna.

The potential resources of Nicaragua are estimated at less than 1,000 tonnes uranium.

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