لبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومـــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصــــل

BENHA UNIVERSITY
FACULTY OF SCIENCE
GEOLOGY DEPARTMENT

GEOLOGICAL SETTING AND RADIO-ELEMENTS DISTRIBUTION IN GABAL EL RESHA-WADI EL ATRASH AREA, NORTH EASTERN DESERT, EGYPT.

A Thesis

Submitted in Partial Fulfillment of the Requirements For The Degree of Master of Science in Geology

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Note

The present thesis is submitted to the Geology Department, Faculty of Science, Benha University in partial fulfillment of the requirements for the degree of Master of Science in Geology. Beside the research work materialized in this thesis, the candidate *Abd El-Basit Mohammed Abd El-Hadi Ali* has attended six post-graduate courses for one year in the following topics:

1- Igneous Petrology

2- Metamorphic Petrology

3- Structure Geology

4- Photogeology

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6- Ore Deposits

He has successfully passed the final exam in the above mentioned courses, besides an English language course.

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ABSTRACT

Gabal El Resha-Wadi El Atrash area covers an area of about 414 Km^2 in northern Eastern Desert, Egypt. It contains rock associations including, metagabbros, older granitoids, Dokhan volcanics, Hammamat sedimentary rocks, younger granites and post granitic dykes.

The metagabbros represent the oldest rock type in the area. These rocks are highly deformed and suffered from severe alteration. Sometimes, they are found as xenoliths within the older granodiorites.

The older granitoids are represented by granodiorites. They are commonly xenolithic and cut by Dokhan volcanics and younger granites. They are characterized by their calc-alkaline nature. Their magma was generated in a compressional environment in a volcanic arc setting.

The Dokhan volcanics belong to mature island arc to active continental margin, and range in composition from andesite to dacite and their pyroclastics.

The Hammamat sedimentary rocks are unconformably overlying the Dokhan volcanics. They consist of bedded series of conglomerates and breccias, greywackes, sandstones, siltstones and purple slates. They mostly contain pebbles of the older granitoids and the Dokhan volcanics.

The younger granites are the most predominant rocks in the area; they intrude the previously mentioned older rocks. They are classified into; monzogranites (Salaat El Atrash), syeno-to alkali feldspar granites (Hmrat El Sorwhyia) and alkali feldspar granites (G. El Resha and G. Al Hamra). The studied monzogranites are considered as I-type, they originated from peraluminous calc-alkaline, high fractionated magma. They are syn-collision granites and formed under a compressional tectonic regime. The syeno and alkali feldspar granites are considered as

I-type and were originated from peraluminous calc-alkaline highly fractionated magma. They are post orogenic granites and formed under an extentional regime in a within-plate tectonic setting.

Dykes of varying composition from felsic and mafic cut the previously mentioned rock types and represent the post tectonic rock variety among the Neoproterozoic Pan-African basement rocks of the Eastern Desert of Egypt.

The area has been subjected to several successive tectonic events, which affected all the exposed rocks. These tectonic events gave rise to many structural features, mainly represented by joints and faults. The significant joint sets predominate in the NE-SW, NW-SE and ENE-WSW directions. Faults in the area are mainly of strike-slip type. NNW-SSE, NE-SW and N-S are the significant fault sets arranged according to their number proportion. On the other hand, NE-SW, N-S and E-W faults are the most predominating according to their length proportion. The NE-SW, N-S, and ENE-WSW trends represent the main structural trends controlling the tectonic framework of the studied area.

The radiometric survey carried out over the rocks of the studied area revealed that the high level of gamma radioactivity is linked to the younger granites if compared with the other rock types. Hmrat El Sorwhyia syeno-to alkali feldspar granite showed significant radioactive anomalies associated with pegmatites.

The radioactive anomalies are structurally controlled by joint sets trending NNW-SSE and ENE-WSW. Finally, it was found that, the high radioactive anomalies are due to the presence of zircon crystals in addition to opaques which play an important role in capturing uranium from circulating solutions.

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