

GRANITES OF THE NAGAR PARKAR AREA, SINDH, PAKISTAN: A SUSTAINABLE NATURAL RESOURCE

Tahseenullah Khan

Department of Earth and Environmental Sciences, Bahria University, Shangrila Road, Sector E-8, Islamabad, Pakistan.

dr.tahseen@bui.edu.pk

Abstract

Granite, one of a key component of natural resources, is commonly used in constructions and dimension stones. Pakistan is bestowed with huge reserves of granites spreading over wide area in the Nagar Parkar, the extreme southeast corner of Pakistan bordering Indian Rajasthan, the Chagai magmatic belt of Baluchistan, the Himalaya, Karakoram and Hindukush mountain ranges. There are estimates of about 297 billion tons of granite reserves in Pakistan with varieties of colors and textures. The granites of the Nagar Parkar area show such variations. On the basis of mineralogy and mode of occurrence, these granites from the Nagar Parkar area may be classified mainly into Wadhrai granite, Karunjhar Hill granite, Dhedvero granite, Churio granite and Nagar Parkar granite. Sadoros rhyolite and felsic dykes are two other types of felsic/acidic rocks granite family. The Wadhrai granite is pinkish gray, apparently fresh and sub-leucocratic, jointed and weathered, and medium to coarse grained. Minerals include quartz, K-feldspar, (microperthite, microcline), plagioclase, aegirine-augite, hornblende, titanite, epidote and magnetite. The Karunjhar Hill granite is gray, partly fresh and leucocratic, coarse grained. The mineral constituents are K-feldspar (microperthite), plagioclase, quartz, riebeckite, hornblende, aegirine-augite, biotite, apatite, zircon, allanite, titanite, epidote, rutile and magnetite. The Dhedvero granite is pinkish, partly altered and deformed, sub-leucocratic and leucocratic, medium to coarse grained. K-feldspar (microperthite, microcline), quartz, plagioclase (minor), biotite, hornblende, apatite, zircon and magnetite constitute the rock. The Churio granite is pinkish, apparently fresh, leucocratic with rapakivi texture. The minerals include K-feldspar (microcline), quartz, plagioclase, biotite, aegirine-augite, hornblende, riebeckite, titanite, epidote, apatite, zircon and magnetite. Granite exposed at Nagar Parkar is reddish pink, partly altered, leucocratic and medium to coarse grained. The rock comprises K-feldspar (microperthite, microcline), plagioclase (minor), quartz, biotite, aegirine-augite, riebeckite, titanite, apatite, zircon, fluorite, epidote, calcite, sericite, kaolin and muscovite and limonite. Sadoros rhyolite is dark gray, banded, jointed, folded, porphyritic and spherulitic. Minerals include K-feldspar (microperthite), quartz, plagioclase (minor), riebeckite, biotite, muscovite, epidote, apatite, zircon and magnetite. The felsic dykes, are present in the entire Nagar Parkar igneous complex. These dykes are brown and porphyritic with fine grained to cherty ground mass. The phenocryst to ground mass ratio is 10:90. The minerals comprising the dykes include K-feldspar (microperthite), quartz, riebeckite, biotite, muscovite, epidote, titanite, kaolin, apatite, zircon and limonite. Geochemically these granites show variation in SiO₂ and F₂O₃ contents. Based on mineralogical characteristics, the granites of the Nagar Parkar area are heterogeneous and impart gray, pinkish gray, pink, brown and dark gray colors. These granites are block jointed fresh and easily mineable dimension stones. Moreover, due to their beautiful colors, shades and durability, these can be used for commercial purposes as construction material, slabs and tiles. Provision of allied facilities at the mining sites of granites in Nagar Parkar can bring Pakistan in the fleet of the countries to export best quality finished products as dimension stones.