Sample Number :   TO61

Identification :   Heavily epidotized, moderately chloritized,
                          leucoxenized and lightly sericitized gabbro

Description :

    The sample is a hand specimen of lightly weathered, medium to
coarse-grained, quartz-free igneous rock composed of light grey,
greenish grey and dark greenish grey silicates.

    A staining test revealed no K-feldspar.

    In thin section the sample displays an hypidiomorphic
crystalline igneous texture, with grainsizes commonly in the range
0.5 to 4mm.   It has been moderately to heavily altered to secondary
minerals.

    Colourless clinopyroxene is prominent as subhedral, short,
prismatic grains, largely free of alteration. Former plagioclase
has been coarsely altered to an epidote group mineral and minor
sericite. Somewhat skeletal 0.5mm grains which were probably
ilmenite have been altered to translucent leucoxene. Chlorite and
relatively coarse, zoned crystals of an epidote group mineral occur
as interstitial aggregates, about 1 to 2mm in size.

    There are rare goethite aggregates after possible anhedral
sulphide grains up to 0.3mm in size.

    An approximate mode is :

35-45%	remnant plagioclase
10-15%	epidote group mineral after plagioclase
1-3%	sericite after plagioclase
30-40%	clinopyroxene
0.8-1%	leucoxene after probable ilmenite
5-10%	aggregates of chlorite and an epidote group mineral
rare	goethite after possible sulphide

Comments and Interpretations :

    The sample is a gabbro which has undergone heavy epidotization
and light sericitization of plagioclase and complete leucoxenization
of probable ilmenite. The alteration is probably of deuteric style,
during late stages of "wet" magmatic crystallization, since chlorite
and some of the epidote group minerals occur in interstitial
locations and probably crystallized directly from cognate solutions.
The loose term saussuritization could be applied to describe the
alteration.

    There may have been rare grains of sulphide present, but it is
considered unlikely that this rock has significance in relation to
metallic mineralization.