# **CAVAN - COUNTY GEOLOGICAL SITE REPORT**

NAME OF SITE
Other names used for site
IGH THEME
TOWNLAND(S)
NEAREST TOWN/VILLAGE
SIX INCH MAP NUMBER
ITM CO-ORDINATES
1:50.000 O.S. SHEET NUMBER

Drumcarban

IGH15 Economic Geology Drumcarban Crossdoney 25 635593E 798976N 34 GSI BEDROCK 1:100.000 SHEET NO. 12

## **Outline Site Description**

The site comprises a series of small outcrops straddling the water line along the shore of a small lake.

## Geological System/Age and Primary Rock Type

The Crossdoney granite pluton is considered to be Caledonian in age (c. 400Ma). It is here host to quartz veins and alteration zones containing minor amounts of molybdenite and chalcopyrite mineralization.

## Main Geological or Geomorphological Interest

The Crossdoney pluton underlies a relatively small area (c. 15 km<sup>2</sup>) 5km southwest of Cavan town. It is of interest as the only granitic intrusion in the county and at Drumcarban it is host to Cu-Mo-sulphide mineralization, a common metal association in granite intrusions worldwide but relatively rare in Ireland. The best-known example of this kind of mineralization in the country is at Mace Head in county Galway.

The pluton comprises granodiorite, monzonite and quartz diorite in its northern part and granodiorite and quartz monzonite in the south. At Drumcarban, the medium-grained equigranular hornblende-biotite granodiorite contains thin (few mm – 20mm wide) quartz veins that trend generally northnorthwest–southsoutheast. The veins contain scattered grains of chalcopyrite (CuFeS<sub>2</sub>) and molybdenite (MoS<sub>2</sub>). The granodiorite surrounding the veins has been intensely altered in places, with the feldspar in the rock altered to sericite and the biotite and hornblende to chlorite. Redistribution of elements during alteration has given rise to light-coloured, "bleached" sericitic zones and greenish chlorite-rich zones in the granodiorite.

#### Site Importance – County Geological Site

The rarity of granite-hosted Cu-Mo mineralization in the country gives Drumcarban a significance that the relatively minor amounts of mineralization on display might not otherwise merit. The site also affords an opportunity to examine outcrop of the only granitic intrusion in County Cavan. For these reasons it should be designated as a CGS. Far better examples of Cu-Mo mineralization are displayed elsewhere in the country so NHA designation is not warranted.

#### Management/promotion issues

The site is on private land on the southern shore of White Lough, adjacent to pasture where cattle were grazing at the time of the field visit. A drainage ditch separates the site from the minor road 100m to the west. Given that the mineralization is minor and not easily seen, the site is likely to be mainly of scientific interest and would not lend itself to promotion among the wider public.



Southern shoreline of White Lough (view to southeast).





Exposure of altered granite with NNW-SSE-trending joint (left); fractured granite displaying irregular zones of sericitization (S) and chloritization (C).





Unmineralized NNW-SSE-trending 20mm-thick quartz vein in granite (left); strongly sericitized granite with disseminated molybdenite and chalcopyrite (not visible in photo) (right).

