

WICKLOW - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Ballyrahan Quarry		
Other names used for site	Ballyraheen Quarry		
IGH THEME	IGH15 Economic Geology		
TOWNLAND(S)	Ballyraheen		
NEAREST TOWN/VILLAGE	Tinahely		
SIX INCH MAP NUMBER	43		
NATIONAL GRID REFERENCE	700675E 671416N		
1:50,000 O.S. SHEET NUMBER	62	GSI Bedrock 1:100,000 Sheet No.	19

Outline Site Description

Ballyrahan Quarry is a small long-abandoned quarry developed in a minor granitoid intrusion, and has been used in recent times for cattle grazing.

Geological System/Age and Primary Rock Type

The bedrock is a fine-grained tonalite (microtonalite), part of a swarm of thin sheet-like intrusions along the eastern margin of the near-contemporaneous Leinster Granite (405 Ma). The microtonalites, centred on Ballinglen, north of Tinahely, were emplaced into pelites and semi-pelites of the Ordovician Maulin Formation.

Main Geological or Geomorphological Interest

The microtonalites are host to a tungsten-tin mineralization that is unique in Ireland. Mineralization comprises scheelite, cassiterite, arsenopyrite, sphalerite and other minerals in thin quartz veins within heavily altered or greisenized microtonalite and its immediate wallrocks. The sub-economic mineralization was discovered in the 1970s and was the subject of a major exploration programme. The best known exposure of mineralization was in the now infilled Ballybeg Quarry, north of Ballinglen. Minor exposure occurs throughout the area but the best examples of mineralization are now seen in preserved drill core. Ballyrahan Quarry is near the southern end of the microtonalite swarm and it demonstrates many of the basic features of the style of mineralization, although mineralization itself is at best weak. Contact between the wallrocks and the microtonalite is very well exposed. Observed features that are characteristic of the mineralization include silicification or quartz vein formation, greisenization and development of muscovite margins to barren quartz veins. The microtonalite sheet has been emplaced conformably along the country rock cleavage and a chilled margin, produced by rapid cooling of the hot magma in contact with the cooler country rock, is present.

Site Importance – County Geological Site

The site contains the best exposure of microtonalite that is host to unique tungsten-tin mineralization in Wicklow. It demonstrates the form of the intrusion and its relationship to the host country rocks. Various features that characterize the mineralization can be observed in the microtonalite exposed here, although mineralization itself is very weak.

Management/promotion issues

The quarry has been abandoned for more than 30 years. Numerous examples of one-off housing are present in the area and the site may be vulnerable to development. It is of interest mainly to geologists and researchers and does not warrant promotion.



Microtonalite outcrop in Ballyrahan Quarry. Sheeted nature of intrusion is clearly visible. Sheet dips southeastwards and is conformable with its host rocks.



Quartz veinlets cutting microtonalite, surrounded by narrow zones of greisenization that have bleached the microtonalite.



Conformable contact between microtonalite sheet and pelitic wallrocks on eastern side of quarry. The microtonalite has a chilled margin, i.e. It is very fine grained at contact where it cooled very rapidly in contrast to the interior of the sheet where cooling was slower.



