

CORK - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Ballygiblin Quarry		
Other names used for site	IEI Depot		
IGH THEME	IGH12 Mesozoic to Cenozoic, IGH1 Karst, IGH8 Lower Carboniferous		
TOWNLAND(S)	Ballygiblin		
NEAREST TOWN/VILLAGE	Kanturk		
SIX INCH MAP NUMBER	24		
ITM CO-ORDINATES	545460E 602940N (centre of quarry)		
1:50,000 O.S. SHEET NUMBER	73	GSi BEDROCK 1:100,000 SHEET NO.	21
GIS CODE	CK014		

Outline Site Description

This site comprises an extensive quarry cut into a prominent, steep-sided limestone ridge.

Geological System/Age and Primary Rock Type

The main part of the quarry, in the west, exposes the lower part of the Copstown Limestone Formation, which is dark grey, well bedded, muddy limestone, while the eastern part of the quarry exposes rocks of the Subulter Volcanic Formation, which are pyroclastic flow and air-fall deposits.

The limestone has fissures that have been enlarged into caves. These caves contain sediments which include pollen from flora of Palaeogene-to-Neogene age.

Main Geological or Geomorphological Interest

Ballygiblin Quarry has not been operational for some time (at time of writing, 2021), and currently houses a depot for Irish Industrial Explosives Ltd. The limestone rocks themselves, as well as the overlying volcanic rocks to their east, are somewhat unremarkable, but the sediments within cavities in the quarry hold the geological interest here.

In this area of north Cork, many of the irregularities in the land surface are of karstic origin and owe their form to the dissolution of the underlying limestone. In the 1980s it had been noted that there were 'clay-filled fissures' in the quarry at Ballygiblin, and work by Mike Simms of the Ulster Museum in 1990 recovered samples which were then analysed. The soft clay sediments occupy a conspicuous spur of rock projecting into the quarry and are extensively exposed in a rather irregular and badly slumped section some 35m in length. The sediment deposit is at least 5 m thick.

The sediments are a striking red colour. X-ray diffraction analysis shows that they are predominantly composed of the minerals illite and kaolinite. They contained microscopic fossils of ferns, flowering plants, conifers and mosses, which grew in a humid, heavily vegetated environment, potentially of a northern temperate forest, and similar to those found in the Lough Neagh clays of Northern Ireland. They are thus considered, given their setting in a cave, reddish weathering profile and pollen flora, to be of Oligocene (33.9 to 23 MY) age.

Site Importance – County Geological Site

The red clays at Ballygiblin are one of only a handful of well-dated Palaeogene and Neogene sites in Ireland. It shows that pockets of Ireland's pre-glacial landscape have survived the Pleistocene glaciations, and have not been completely obliterated, as can sometimes be the misconception.

Management/promotion issues

The quarry is not suitable for general promotion, especially as the base of the quarry is flooded, many of the rock faces are high, and in parts they are very unstable. Ballygiblin Quarry is likely to be of interest primarily to geologists only.



A panorama of Ballygiblin Quarry, viewed from the south.



The spur of rock which hosts the red clays.



The infilled cavity choked with red clays.



Detail of the red clays.



Clay-filled cavity extending deep in the ground.

