

DORSET LOCAL GEOLOGICAL SITE SURVEY

Site number G SY78/11

Site name Poxwell quarry

Summary description

Jurassic, Portland Freestone Series and Cherty Series, and Cretaceous Lower Purbeck, Lulworth Formation.

A quarry face 15m in length is exposed with creamy chalky micrites of the Cherty Series and grey chalky pelmicrites of the Freestone Series. Midway through the Freestones lies a chert band. The basal Purbeck shows two well defined dirt beds. Fossil trees, bivalves, gastropods, ostracods, ammonites and sponge spicules may be found.

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In the quarry facing the road is a short face at right angles to a 15m long exposure of the Portland Limestone Formation, with the lowest Purbeck strata above. The upper Chert Beds form the lower slopes of the long face, though this is mostly obscured by talus. The Freestone Beds are of a chalky, micritic texture, the first being topped by a thin chert bed in which sponge spicules can be seen. Above lies a chalky biomicrite abundant in large bivalves, such as *Laevitrigonia gibbosa*, *Protocardia* and *Pleuromya*, some of which may be bored. Occasional moulds of gastropods and micrite intraclasts can be found.

Two Dirt Beds, the Basal and Lower Dirt Beds, can be seen in the overlying Purbeck strata, with the algal limestones between. One fossil tree has been seen.

A Vodafone mast has been erected, away from the face. In the interest of Health and Safety the contractors reduced the fallen blocks of Portland limestone to rubble, thus removing some of the geological interest. They have fenced the quarry in order to protect their installation, so the area needs frequent conservation to remove nettles etc.

In November 2012 an excavation was carried out immediately south of this clear face, in order to obtain Cypris Freestone building stone for the repair of Wolfeton House, Charminster. The historic quarry in the Cypris Freestones continues southwards in a narrow ditch across the side of the hill. On the northern side of the road the continuation of the historic quarry has been designated as an SSSI in recognition of the presence of the Purbeck Insect Beds.

The Poxwell Pericline is a structural feature that can be seen very clearly on the hillside both sides of the road.

Section drawn for new excavation 22.11.2012

Bed No.	Thickness	Observations
20	13cm	Grey limestone with coarser texture, possibly ooliths, at the top.
19	22cm	Creamy or yellow laminated marl
18	10cm	Light brown or buff coloured clay, sandy at the top.
17	20cm	Fine grained marl
16	10cm	Clay, slight orange colour at base
15	45cm	Same as bed 14. Sandy, softer at base and hard and crystalline towards the top.

14	160cm	Thick bed of very sandy material. Possibly limestone or calcite cement. Crumbly at base but very well cemented and crystalline at the top.
13	39cm	Creamy clay or marl, sandy at base
12	27cm	Fine grained creamy micrite, some lamination
11	30cm	Bed of fine sand, some lignite, slight fining towards the top.
10	29cm	Grey orange clay (marl?)
9	19cm	Hard, laminated grey micrite
8	25cm	Grey cream laminated clay
7	7cm	Buff coloured micritic limestone
6	3.5cm	Orange brown clay
5	15cm	White grey limestone with some ostracods
4	30cm	Creamy laminated limestone with some ostracods and lenses of finer grained material towards the top of the bed.
3	20cm	Laminated buff coloured clay
2	45cm	Creamy coloured limestone
1	100cm	The base of this bed was not visible but at least 1m was exposed. Creamy coloured limestone with abundant ostracods. ? Cypris Freestone.

Published references

West IM 1975: Evaporites and associated sediments of the basal Purbeck Formation (Upper Jurassic) of Dorset. *Proceedings of the Geologists' Association*, **86**, 205-25.

Sylvester-Bradley P.C. 1949: A section of the Purbeck Beds at Poxwell. *Proceedings of the Geologists' Association* **60**, 151-3