



South Wales RIGS Group Site Record RIGS Description

SECTION A

General	South Wales
Site Name: Ely Brick Works	File Number: Site_263_53
RIGS Number: 653	Surveyed by: Elaine Burt & Rhian Kendall
Grid Reference: Start at ST 1376 7508	Date of Visit: 25 th January 2011
RIGS Category: Scientific, educational	Date Registered:
Earth Science Category: Stratigraphical, sedimentological	Owner: Unknown Planning Authority: Vale of Glamorgan Council
Site Nature: Cliff section / old quarry	Documentation prepared by: Elaine Burt
Unitary Authority: Vale of Glamorgan Council	Documentation last revised: 2 nd February 2011
OS 1:50,000 Sheet: 171	Photographic Record: Attached
OS 1:25,000 Explorer Sheet: 151	
BGS 1:50,000 Sheet: E263	
<p>RIGS Statement of Interest:</p> <p>This site is the best inland site in the district where the Blue Anchor Formation of the Mercia Mudstone Group can be studied. The base and top contacts of the formation are present in the cliff sections.</p> <p>The site is useful for educational purposes as it would be relatively safe environment in which to study the rocks of the Mercia Mudstone Group (formerly known as the Keuper Marl).</p>	

Geological setting/context:

The site is now located to the south of the A4232 road. This area was formerly worked for clay for the nearby brickworks and it is likely that the cliff sections formed part of the old workings. The site comprises a long line of relatively low cliff sections and embayments, some of which are degraded and overgrown.

The cliff sections at this site display the transition from the predominantly red mudstones of the Mercia Mudstone Group to the interbedded red and green-grey mudstones of the Blue Anchor Formation, the upper part of the Mercia Mudstone Group. The top contact of the Blue Anchor Formation with the overlying Penarth Group lithologies is also present at this site, although these are largely overgrown. The sections display in total approximately 15m of the stratigraphy.

The rocks at this locality are all Triassic in age. Those at the base of the cliff sections belong to the Mercia Mudstone Group and comprise massive red mudstones with common nodules of white and pink gypsum. Pale green 'reduction spotting' is also commonly seen. The mudstone is slightly calcareous in character and is often referred to as 'marl'. Thin red siltstone beds are sometimes developed within the mudstones. The beds dip very gently towards the south or south-east at 3° to 5°.

The Blue Anchor Formation is present at the top of the Mercia Mudstone Group. It is up to 16m in thick in this area (Waters and Lawrence, 1987), and is marked by a change to predominantly green-grey mudstones. This unit was formerly referred to as the Tea-Green Marls (Richardson, 1911). The formation shows good bedding, compared to the underlying red mudstones, and contains thin beds of dolomite and limestones as well as the dominant laminated mudstones. Beds range in thickness from 5 to 20cm. Sparse fossil material has been recovered from the upper parts of the Blue Anchor Formation in this district (Storrie, 1894; Ivimey-Cook, 1974).

The Mercia Mudstone Group is interpreted as being deposited in a lake with periods of prolonged subaerial exposure (Strahan and Cantrill, 1902; Warrington, 1970; Waters and Lawrence, 1987). This is consistent with the development of the gypsum nodules in a sabhka type environment and the thin silt beds indicating a marginal influence. The Blue Anchor Formation lithologies suggest totally subaqueous deposition, consistent with a raised water level in the lake at this time, although Orbell (1973) recognises a marine influence from work on the upper part of the formation at Lavernock.

The top of the Blue Anchor Formation is taken at the incoming of the dark grey shales of the overlying Westbury Formation (Penarth Group). This unit is at the top of the cliffs, but the contact is not presently exposed.

References:

- IVIMEY-COOK, H C. 1974. The Permian and Triassic deposits of Wales. 295-321 in The Upper Palaeozoic and post-Palaeozoic rocks of Wales. Owen, T.R. (editor). (Cardiff: University of Wales press)
- ORBELL, G. 1973. Palynology of the British Rhaeto-Liassic. Bulletin of the Geological Survey of Great Britain. Vol. 44 1-44.
- RICHARDSON, L. 1911. The Rhaetic and contiguous deposits of West, Mid and part of East Somerset. Quarterly Journal of the Geological Society of London. Vol. 67, 1-72.
- STORRIE, J. 1894. Notes on the tooth of a species of Mastodonsaurus, found with some other bones near Lavernock. Transactions of the Cardiff Naturalists Society. Vol. 26, 105-106.
- STRAHAN, A and CANTRILL, T C. 1902. The geology of the South Wales Coalfield. Part III. The country around Cardiff. Memoir of the Geological Survey of Great Britain (2nd edition) Sheet 263.
- WARRINGTON, G. 1970. The stratigraphy and palaeontology of the 'Keuper' series of the central Midlands of England. Journal of the Geological Society of London. Vol. 126, 183-223.
- WATERS, R A. and LAWRENCE, D J D. 1987. Geology of the South Wales Coalfield, Part III, the country around Cardiff. 3rd edition. Memoir of the British Geological Survey, Sheet 263 (England and Wales).

SECTION B

PRACTICAL CONSIDERATIONS:

Please score Accessibility and Safety Red Amber or Green

Accessibility:

X

Comment: The site can be accessed from a path near Cwrt yr Ala football club running to the south side of the A4232. A rough path can then be followed along the base of the cliff sections.

Safety:

X

Comment: The cliff sections are relatively low, but degraded and may be subject to rockfalls at times. Hard hats are recommended for walking at the base of the sections. In some places the cliffs sections are low and appear to be stable.

The path to the start of the site is well maintained, but the rough paths within the site are overgrown and not maintained.

Conservation status:

There are no known conservation designations of this RIGS

OWNERSHIP/PLANNING CONTROL:

Owner/tenant: Unknown

Planning Authority: Vale of Glamorgan Council

Planning status/constraints/opportunities:

There are no known planning constraints or opportunities

CONDITION, USE & MANAGEMENT:

Present use:

Site condition: Partly overgrown with only rough paths

Potential threats: dumping of waste and possible development

Site Management: Some faces and paths could be cleared of vegetation for a better view of the geology.

SITE DEVELOPMENT:

Potential use (general):

Potential use (educational): There are a range of sedimentological features visible at this site. The cliff sections are low in some places and appear to be relatively stable. These would be useful for looking at and logging the rocks. The site would also be useful for hammering as no restrictions are currently in place.

Other comments:

Photographic Record







