



South Wales RIGS Group Site Record RIGS Description

SECTION A

| General | South Wales |
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| Site Name: Cwmynyscoy Quarries East | File Number: Site_RAW_JRD_56 |
| RIGS Number: 629 | Surveyed by: R A Waters and J R Davies |
| Grid Reference: ST 2832 9938 | Date of Visit: 20 th October 2010 |
| RIGS Category: Scientific, educational | Date Registered: |
| Earth Science Category: Stratigraphical, sedimentological, industrial | Owner: Torfaen County Borough Council/Countryside Council for Wales Planning Authority: Torfaen County Borough Council |
| Site Nature: Disused quarry/crop working | Documentation prepared by: R A Waters |
| Unitary Authority: Torfaen County Borough Council | Documentation last revised: 2 nd February 2011 |
| OS 1:50,000 Sheet: 171 | Photographic Record: Attached |
| OS 1:25,000 Explorer Sheet: 152 | |
| BGS 1:50,000 Sheet: 249 | |
| <p>RIGS Statement of Interest:</p> <p>Cwmynyscoy Quarries East forms part of a network of sites on the east crop of the South Wales Coalfield that demonstrate the stratigraphy and geological history of the Carboniferous Limestone. It has been proposed as a RIGS as an accessible site that provides a good section through the upper part of the Avon Group and lowermost part of the Clydach Valley Subgroup which form the lowermost part of the Carboniferous Limestone succession in the area. The site is also part of a local nature reserve which is open to the public.</p> <p>The site is the type locality for the Cwmyniscoy Mudstone, the upper formation of the Avon Group. The site is important as sections in this mudstone-dominated unit are very uncommon. It therefore provides an excellent locality for the scientific study of the stratigraphy and sedimentology of the unit at its type locality. It also provides an exposure of the contact with the overlying Sychnant Dolomite Formation. This contact is of great interest to researchers investigating the geological history and sedimentology of the Clydach Valley Subgroup as it represents a step change in the environment of deposition of the rocks.</p> <p>The site is also a good one for students to study marine mudstones rich in shelly fossils, and see an example of crop working of a thin limestone formation.</p> | |

Geological setting/context:

Cwmynyscoy Quarry East offers a section through the lowest part of the Carboniferous Limestone on the northern part of the east crop of the South Wales Coalfield. It exposes a partial section through the early Courceyan Avon Group that here comprises the Castell Coch Limestone overlain by the Cwmyniscoy Mudstone Formation. The lowest part of the overlying Clydach Valley Group is also seen.

The quarry was worked for the 15 m-thick Castell Coch Limestone by a 300 m-long crop working. It has been partly backfilled on various occasions, the last being during the creation of the nature reserve. Today, approximately 10 m of thick bedded Castell Coch Limestone is seen at the southern end of the crop working, but it is very poorly exposed due to dense trees and bushes growing adjacent to the faces and could not be accessed during the visit. The quarry is the type section for the overlying Cwmyniscoy Mudstone (Waters et al., 2009) which is partially exposed on the western side of the southern end of the crop working. The quarry has been described by Squirrel and Downing (1969) (as Cwm quarries) and by Burchette (1987).

Squirrel and Downing (1969) recorded the Cwmyniscoy Mudstone as 21 m thick in the quarry, but today only the uppermost part is exposed near the top of the west face, the lower part of the face being degraded and overgrown. It comprises 6 m of buff weathering, grey crumbly mudstones with scattered sheet-like beds of variably dolomitised limestones, 2-10 cm thick. The limestones comprise shelly crinoidal packstones and fine-grained packstone. Some beds are graded. Squirrel and Downing (1969) report a varied fauna, dominated by brachiopods. The base of the overlying Courceyan Clydach Valley Subgroup is sharp. Only the basal 5 m is seen and this comprises medium bedded fine-grained dolomites referable to the Sychnant Dolomite Formation.

The Cwmyniscoy Mudstone was deposited in an open marine setting, seaward of any barriers. It represents a major transgression that flooded the barrier shoals of the underlying Castell Coch Limestone. The mudstones comprise the background sediment being deposited on the ramp, while the limestones reflect storm activity that brought bioclastic debris from nearer shore environments to deposit them as event beds further offshore. The sharp contact with the Sychnant dolomite probably reflects shallowing as a result of progradation. The dolomite is presumed to have been deposited front barrier.

References:

BURCHETTE, T P. 1987. Carbonate –barrier shorelines during the basal Carboniferous transgression: the Lower Limestone Shale Group, South Wales and western England. 239-63 *in* European Dinantian environments. MILLER, J, ADAMS, A E and WRIGHT, V P. (editors). *Geological Journal Special Issue* No 12. (Chichester: John Wiley).

SQUIRRELL, H C, and DOWNING, R A. 1969. Geology of the South Wales Coalfield, Part I, the country around Newport (Mon). 3rd edition. *Memoir of the Geological Survey of Great Britain, Sheet 249 (England and Wales)*.

WATERS, CN, WATERS, RA, BARCLAY, WJ, and DAVIES, J R, 2009. Stratigraphical framework for Carboniferous successions of Southern Great Britain (Onshore). *British Geological Survey Research Report*, RR/09/01.

SECTION B

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| PRACTICAL CONSIDERATIONS: Please score Accessibility and Safety Red Amber or Green | | | |
| Accessibility: | | | X |
| Comment: Open to public as a Local Nature Reserve | | | |
| Safety: | | X | |
| Comment: Some quarry faces sloping and crumbly; vertical ones need examining for stability. Access to some faces via scree slopes needs care. | | | |
| Conservation status: Site is currently part of Cwmyrnyscoy Local Nature Reserve | | | |

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| OWNERSHIP/PLANNING CONTROL: | |
| Owner/tenant: Torfaen County Borough Council /Countryside Council for Wales | |
| Planning Authority: Torfaen County Borough Council | |
| Planning status/constraints/opportunities: Site is currently part of Cwmyrnyscoy Local Nature Reserve | |

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| CONDITION, USE & MANAGEMENT: |
| Present use: Disused quarries/crop workings, that have been partly backfilled. Currently part of a local nature reserve. |
| Site condition: Quarry faces partially obscured by bushes, saplings and trees. |
| Potential threats: increasing vegetation growth. |
| Site Management: Selected parts of the quarry faces should be cleared of vegetation |

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| SITE DEVELOPMENT: |
| Potential use (general): |
| Potential use (educational): Good site for those undertaking scientific research into the sedimentology and stratigraphy of the Cwmyrnyscoy Mudstone and Sychnant Dolomite. Also a good site for students to study marine mudstones with a varied shelly fauna and dolomites. It also provides an example of crop working of a thin geological unit. |

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| Other comments: |
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Photographic Record



Top of western face at southern end of crop working: Mudstones and thin limestones of the Cwmyniscoy Mudstone



Top of western face at southern end of crop working: Base of Sychnant Dolomite.



Southern end of crop working in the Castell Coch Limestone showing overgrown faces.