



## South Wales RIGS Group Site Record RIGS Description

### SECTION A

General	South Wales
<b>Site Name: Mynydd Myddfai Tilestones Quarries</b>	<b>File Number: AB_1</b>
<b>RIGS Number: 796</b>	<b>Surveyed by: A Humpage/ A Bowring</b>
<b>Grid Reference: SN 78780 28200 to 81910 230390</b>	<b>Date of Visit: October 2010</b>
<b>RIGS Category: Scientific/ Educational</b>	<b>Date Registered:</b>
<b>Earth Science Category: Geomorphological / Structural</b>	
<b>Site Nature: Mid elevation plateau surface</b>	<b>Documentation prepared by: AJH</b>
<b>Unitary Authority: Carmarthenshire</b>	<b>Documentation last revised: 19 March 2011</b>
<b>OS 1:50,000</b> Sheet 160	<b>Photographic Record: See images attached to this report</b>
<b>OS 1:25,000</b> Explorer Sheet OL12	
<b>BGS 1:50,000</b> Sheet 212 (Llandovery) and Sheet 213 (Brecon)	

#### **RIGS Statement of Interest:**

The Tilestones Formation marks the base of the Old Red Sandstone succession, although they are Late Silurian (Pridoli) in age. The Tilestones are highly micaceous, laminated and low angle cross-bedded, yellowish brown sandstones which vary from 38-47m in thickness. The formation represents an upper shoreface and emergent mouth bar environment of deposition at the onset of the terrestrial Old Red Sandstone.

Where the Tilestones Formation was found to be particularly 'flaggy', i.e. it readily splits into thin sheets, then quarries were opened up to shape this material into roof tiles. The spectacular remains of workings, which stretch for many miles along the Mynydd Myddfai (and further north onto the Epynt) are of particular note, not only for their early working during the early 18<sup>th</sup> and 19<sup>th</sup> centuries, but because the outcrop pattern clearly shows offsets where faults dissect the hilltop. The Tilestones were widely used for roofing until the arrival of the railways which could bring cheaper North Wales slates to the area. Whilst these tiles would have covered the roofs of many ancient buildings in the area, few now survive as they have been replaced by slates or modern materials. One exception is Llandyfan Church [SN 264170 217110]

### **Geological setting/context:**

The emergent facies of the Late Silurian Tilestones Formation represents the culmination of the shallowing of the Ordovician and Silurian Welsh Basin, with progradation of nearshore facies across underlying deeper marine deposits (Schofield et al 2009). Overlying the Tilestones Formation, the first of the Old Red Sandstone facies, the Raglan Mudstone Formation, marks the onset of a fluviially dominated coastal plain environment on the margins of Laurussia, the Old Red Sandstone continent.

The rocks are tilted steeply to the southeast as part of a geological structure called the Myddfai Steep Belt. The Myddfai Steep Belt is a geological structure which affects rocks of Silurian and Devonian age in mid Wales. It extends for tens of miles across country from near Carmarthen northeastwards via Mynydd Myddfai, Mynydd Bach Trecastell and Mynydd Epynt to the vicinity of Llangammarch Wells. Within this linear zone, the rock beds have been tilted steeply to the southeast. The folding took place in late Silurian to early Devonian times. This structure gives rise to a series of landscape features along its length, not least the steep northwest-facing scarps of the hills and ranges mentioned above. Indeed the feature can be seen as a significant lineation in aerial and satellite views of Wales. (BGS, 2005 etc etc Barclay *et al* 2005, Schofield *et al* 2009).

The Steep Belt effectively marks the southeastern edge of the intensely folded region of the Caledonian Orogenic Belt in central Wales. A series of major folds and faults affect the Ordovician and Silurian rocks to its northwest whilst folding and faulting of the Devonian rocks to its southeast is much more subdued. The Steep Belt forms a part of a much longer feature which extends from Pembrokeshire as far as Shropshire and Cheshire and is sometimes referred to as the Pontesford Lineament. The Lineament includes the Pontesford-Linley Fault, the Clun Forest Disturbance and the Red Rock Fault Zone which marks the eastern edge of the Cheshire basin.

### **References:**

Barclay, W.J., Davies, J.R., Humpage, A.J., Waters, R.A., Wilby, P.R., Williams, M., and Wilson, D. (2005). Geology of the Brecon District – a brief explanation of the geological map. *Sheet Explanation of the British Geological Survey*. 1: 50,000 sheet 213 Brecon (England and Wales).

British Geological Survey (2005). *Brecon. England and Wales Sheet 213. Bedrock and Superficial Deposits*. 1:50,000. British Geological Survey, Keyworth.

British Geological Survey (2008). Llandovery. *England and Wales Sheet 212. Bedrock and Superficial Deposits*. 1:50,000. British Geological Survey, Keyworth.

Schofield, D.I., Davies, J.R., Jones, N.S., Leslie, A.B., Waters, R.A., Williams, M., Wilson, D., Venus, J. and Hillier, R.D. (2009). Geology of the Llandovery District – a brief explanation of the geological map. *Sheet Explanation of the British Geological Survey*. 1: 50,000 sheet 212 Llandovery (England and Wales).

## SECTION B

### PRACTICAL CONSIDERATIONS:

Please score Accessibility and Safety Red Amber or Green

#### Accessibility:



Comment: The site is accessible along the byways and the plateau is crossed by public footpaths and is open access land.

#### Safety:



Comment: The site is on rough upland grazing and is a remote upland area. Appropriate clothing and footwear is essential.

#### Conservation status:

The north-eastern end of the Tilestone Quarries lie within Waun Ddu SSSI. The RIGS is wholly within the Brecon Beacons National Park.

### OWNERSHIP/PLANNING CONTROL:

**Owner/tenant:** Unknown/ BBNPA

**Planning Authority:** Carmarthenshire County Council

#### Planning status/constraints/opportunities:

There are no known planning constraints or opportunities

### CONDITION, USE & MANAGEMENT:

**Present use:** The site is upland rough grazing .

**Site condition:** Generally good

**Potential threats:** Damage to landscape by gas pipeline infrastructure.

**Site Management:** Maintain current management practices.

### SITE DEVELOPMENT:

**Potential use (general):** This site is of interest to the general public, but it probably does not warrant any on-site interpretation initiative. Its importance lies in its industrial stories and the fact that the effects of faults can be clearly seen on the land surface due to the offsetting of the line of quarries.

**Potential use (educational):** An accessible site that may provide options for interpretation allied to other sites in the area.

### Other comments:

## Photographic Record

Insert photographs. Use separate sheet if required



The line of the Tilestones quarries looking north-east. This view illustrates the exposed upland nature of this RIGS.



Small pit in Tilestones quarries showing remnants of worked material



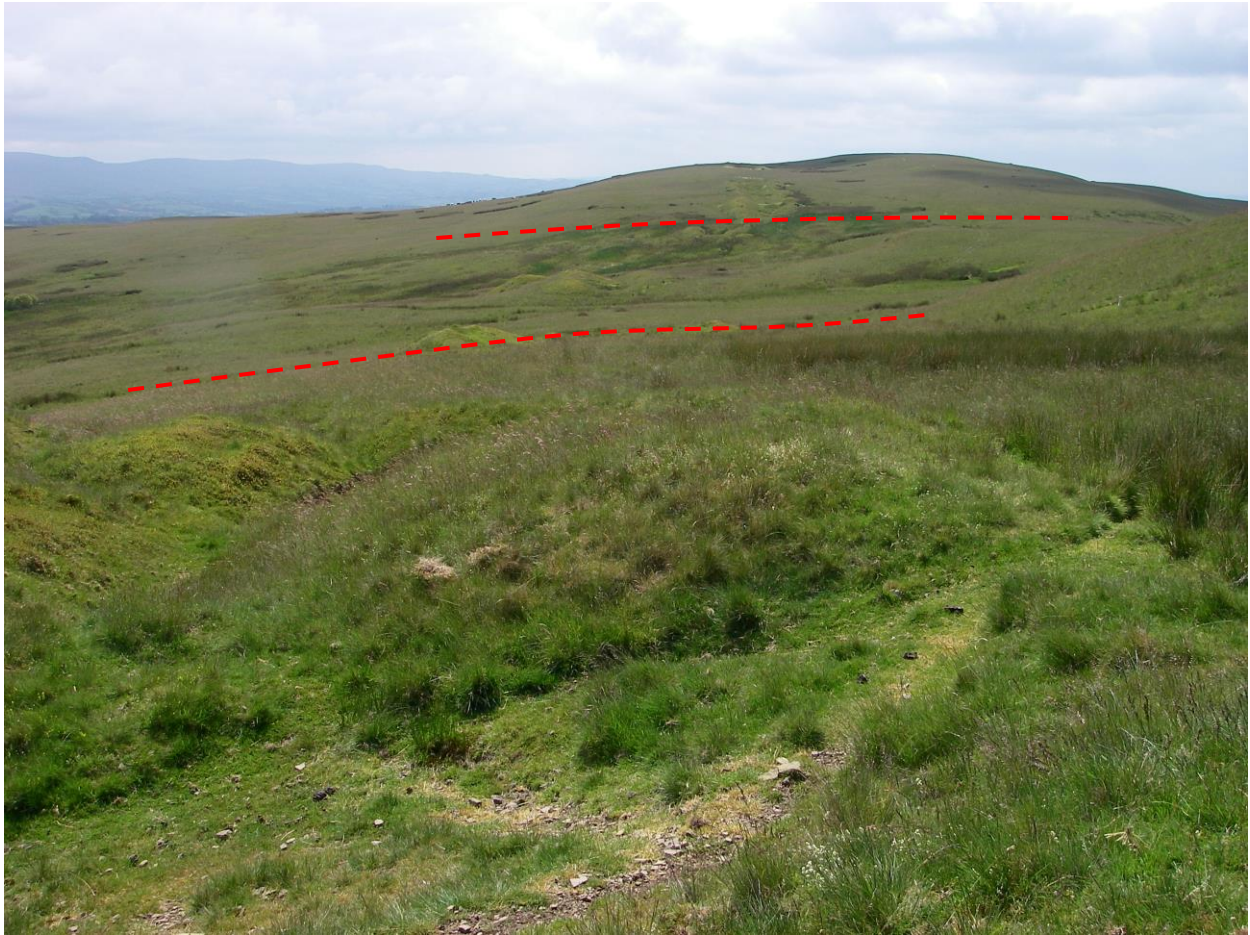


Quarry spoil material left in the quarries. The quarries typically are a trench with mounds of spoil on either side.



Route of gas pipeline which cuts across Mynydd Myddfai and the outcrop of Tilestones Formation.





View looking south-west along Mynydd Myddfai. The offsetting of the Tilestones Formation quarries clearly illustrates the presence of faults (highlighted in red)



View looking south-west showing the distinct feature formed by the quarries closely following the outcrop of the Tilestones Formation.





Typical spoil heap of broken Tilestones. The thin flaggy nature of the sandstone is clearly evident



The trig point and plateau top of Mynydd Myddfai adjacent to the pipeline route.