



South Wales RIGS Group Site Record

RIGS Description

SECTION A

General	South Wales
Site Name: Clive Mines	File Number: Site_minescan_9
RIGS Number: 668	Surveyed by: Russell Society
Grid Reference: ST 2120 8730	Date of Visit: 31 st July 2010
RIGS Category: Historical, scientific	Date Registered: Owner: Unknown Planning Authority: Caerphilly County Borough Council
Earth Science Category: Mineralogical, industrial, historical	
Site Nature: Old workings in woodland, much of which is recreational and Open Access land.	Documentation prepared by: Russell Society
Unitary Authority: Caerphilly County Borough Council	Documentation last revised: 28 th February 2012
OS 1:50,000 Sheet: 171	Photographic Record: Attached
OS 1:25,000 Explorer Sheet: 152	
BGS 1:50,000 Sheet: E249	
<p>RIGS Statement of Interest:</p> <p>The area of Clive Mines has been proposed as a RIGS because it offers an easily accessible public area of interesting old lead mine workings. Scattered over an area of around 1km by 2km covering the southern part of the Coed Cefn-pwll-du forestry and the wooded area to the west, the old workings reflect several phases of industrial activity, from Roman (or possibly even pre-Roman) time to the mid-late 1800s. Minerals found, although now seen mainly in old tip material, are of a type of mineralisation widespread along the outcrop of Carboniferous Limestone in South Wales, together with secondary alteration minerals. Primary mineralisation includes galena, baryte (relatively widespread), calcite and sphalerite. Alteration products include hemimorphite, smithsonite (some good samples), cerussite and others. The area offers some excellent examples of these secondary minerals, some of which are quite rare.</p> <p>In the Minescan survey of ten years ago, Bevins and Mason (2000) described it as the “largest and perhaps most interesting area of old lead mines in South Wales, particularly when their history is taken into account.” The minerals are of research value, and the area “is an important aspect of the South Wales network” of regional mineralisation.</p> <p>Given that the area is very accessible and is already a public recreational area, in addition to the research value offered by the mineralisation especially the secondary minerals, there is plenty of scope for public education of the mineralogy, geology and industrial heritage. It also offers plenty of scope for mineral collectors, new and old.</p>	

Geological setting/context:

The workings lie within the outcrop of Carboniferous Limestone (Pembroke Limestone Group), dolomitised and often haematised, which dips to the north-west for the most part at about 10°-20° along the southern margin of the South Wales coalfield.

The old lead workings are now seen mostly as depressions (estimated nearly 200 in number) reflecting former pits, trenches, adits and shafts. Some of the shafts have been infilled, some shafts are fenced off, and rock outcrop can usually be seen in their sides. Some of the workings are grouped in certain areas (eg "Clive West" (ST211871), "new site northeast of Maenllwyd (ST20388686)", "Clive" ST215877 etc), others workings are scattered through the woods. Some are relatively deep, others shallow. One, at Clive United (ST20798702), comprises a cut leading into an excavation, with adits leading off in its lower part. Mineralisation is also observed in the adjacent disused Cwm Leyshon quarry (ST211869); this is not included in the RIGS because there is no public access and there have been dangerous rock falls in recent years.

In situ mineralisation can occasionally be seen, comprising stringers and veinlets of galena, barite, and calcite. Several trend lines have been identified (eg Dean 1981), seen as elongate lines of workings, more ENE-WSW but some NNE-SSE, suggesting a conjugate system of mineral fractures. There is evidence of faulting and/or jointing, with fracturing, slickensides and fault breccia in the mineralised areas.

Tips surround the workings, some of which are only lightly grassed over. Occasionally, old dressing floors (ore treatment) areas are discernible, with surrounding mineralised rock fragments. Of particular interest are the secondary supergene minerals found. Although the tips are often grassed over and are deteriorating, with a little digging minerals can soon be found, and there is quite a lot of tip material! On the site visit in 2010, primary galena, baryte, calcite, sphalerite (probably more present than previously reported) and pyrite were found, as were secondary hemimorphite, smithsonite (some good samples), cerussite, hydrozincite, aurichalcite, malachite and iron oxides.

The mineralisation is identified as being of "Mississippi Valley type", of regional importance along the outcrop of Carboniferous Limestone in South Wales. Although not of the quality of nearby Machen Quarry, the Clive Mines area is much more accessible to the public and offers an interesting industrial heritage.

References:

TUCK, J & N. 1971. Roman Mine, Bristol Excavation Club Caving report no 15
BEVINS, R E and MASON, J S. 2000. Results of a mineralogical site survey of Glamorgan and Gwent compiled by the National Museums & Galleries of Wales. Welsh metallophyte and metallogenic evaluation project, CCW.
DEAN, A. 1981. Geological influence upon land use at Coed-Cefn-Pwll-Du, Draethen; revealing environmental conflicts. Thesis, University College, Cardiff, Environmental Studies

PRACTICAL CONSIDERATIONS: Please score Accessibility and Safety Red Amber or Green			
Accessibility:			X
Comment: Excellent access to virtually all of the area along forest tracks and paths. Part of the site is on open access land. Some old shafts are fenced off, but can be viewed from the fence			
Safety:			X
Comment: Some scrambling and short traverses through woodland may be needed for parts			
Conservation status: There are no known conservation designations of this RIGS			

OWNERSHIP/PLANNING CONTROL: Owner/tenant: Unknown Planning Authority: Caerphilly County Borough Council Planning status/constraints/opportunities: There are no known planning constraints or opportunities

CONDITION, USE & MANAGEMENT: Present use: Woodland / forestry / public recreational area Site condition: Wooded, overgrown in part, much leaf material on floor, some parts are relatively clear, grassed over tips Potential threats: Further growth of woods, undergrowth and deterioration of shafts and tips Site Management: Several parts of the site need some clearance, and would need periodic clearance thereafter
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SITE DEVELOPMENT: Potential use (general): Good site for introducing the public to the mining history of the area (going back to Roman times or even earlier) ie to the heritage of this part of South Wales. Potential use (educational): Good site for those interested in the study of secondary supergene mineralisation including scientific/research study. Good site for introducing the public to the collection and study of minerals, as well as those already collectors. Potential for good parking, access and safety.
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Other comments: See also the 2000 RIGS Minescan recommendation by Bevins and Mason (attached) Following the 2010 visit, the Bevins and Mason recommended area has been amended to cover even more old workings, reflecting further aspects of the lead mines and their history. The references of Tuck (1971) and Dean (1981) give further descriptions of some of the sites and their mining history. Of particular note are the two Roman workings identified by Tuck (1971), one was subsequently found to be the site of a 3rd century money-counterfeiting operation.

Photographic Record



Clive United ST2079 8702

View south from the top of the main excavation (from ST 2079 8702) with a view across the main excavation to the entrance along the cut



Clive United ST 2079 8702

In-situ mineralisation showing veins of galena and baryte in haematised dolomite



Clive – the 'Roman' shaft ST 2173 8701



Clive – radiating sprays of hemimorphite on calcite (up to 10mm in size)



North-east of Maenllwyd Inn, ST 2038 8686. Typical depressions and spoil tips

Annotated Sketch

Appendix

Citation for Clive Mines RIGS from Bevins and Mason (2000)

GCR REVIEW OF METAL MINES AND MINERAL SITES in GLAMORGAN/GWENT SITE CITATION

SITE NAME: Clive Mines
MINESCAN REF No: M267-269

1:50000 OS map no Landranger 171
1:25000 OS map no Explorer 152
NGR: ST 215 877 (Centre of area)

LOCATION: Caerphilly, South Wales

TYPE of SITE: Extensive old mines, opencuts and tips

SITE SCORE: 230
RANKING: RIGS

SITE INSPECTION:
DATE: Jan 2000

SURVEYED BY:
J.S. MASON for Dept of
Geology, NMGW

RIGS STATEMENT OF INTEREST:

This is the largest and perhaps most interesting area of old lead mines in South Wales, particularly when their history is taken into account. Worked since Roman times, this expanse of opencuts and tips reveals information about the morphology of the ore deposits and some exposures of the mineralisation. Although heavily overgrown in places, the tips yield an abundant suite of both primary and secondary Pb-Zn-Cu minerals associated with baryte, calcite and in places quartz. The specimens are of research value, although they do not approach those from the nearby Machen Quarry in quality. Nevertheless, this site is an important aspect of the South Wales network.

GEOLOGICAL/MINERALOGICAL DETAILS:

GEOLOGICAL SETTING:

Dolomitised Carboniferous limestones are criss-crossed by a series of abundant E-W (general) trending mineralised fractures together with a subordinate NNW-SSE trending series, forming a conjugate set. These structures are manifested as belts of shattered limestone cemented by baryte and other minerals.

PRIMARY MINERALOGY:

Baryte and galena predominate, with generally lesser amounts of calcite and quartz. Sphalerite, chalcopyrite and late marcasite are rare in their unoxidised form.

SECONDARY MINERALOGY:

Secondary minerals are abundant, particularly hemimorphite and smithsonite formed by decomposition of sphalerite. These minerals may be stained yellow by cadmium. Cerussite is not uncommon but anglesite is relatively rare. Secondary copper-bearing species (malachite and aurichalcite) occur sparingly.