EXTRACT FROM ENGLISH HERITAGE'S RECORD OF SCHEDULED MONUMENTS

MONUMENT: 18th century copper mill 80m north west of Copper Mill Bridge

PARISH: WHASHTON

DISTRICT: RICHMONDSHIRE

COUNTY: NORTH YORKSHIRE

NATIONAL MONUMENT NO: 34823

NATIONAL GRID REFERENCE(S): NZ14350551

DESCRIPTION OF THE MONUMENT

The monument includes earthwork and buried remains of the 17th and 18th century copper smelt mill near Whashton. The monument is located on the west bank of the beck, 50m upstream from Copper Mill Bridge, and includes the buried remains of the smelt mill, wheelpit and areas of waste debris.
The monument lies at the eastern end of the Feldom Moor copper field, 5km north west of Richmond. Copper has been extracted in the Richmond region since the 15th century; a charter of Edward IV in 1454 refers to a `copper mine of Richmond'. This area lies to the east of the Swaledale Mineral Belt in the north eastern part of Northern Pennine orefield. On Feldom Moor a vein of copper and lead, which extended for 1km, was worked by bell pits to extract copper pyrite. This was then smelted at the mill located at the eastern end of the vein. A mill known as Whashton High Mill was in existence in 1675. There was still a mill at the site in 1728 when it belonged to John Ward and John Appleby, who also held the lease for Feldom Mines. Based on the level of technology at the Feldom mines their period of working, and consequently that of the smelt mill, was probably late 17th to mid-18th century. It has been estimated that the production of copper concentrate from the Feldom mines was in excess of 400 long tons.
The remains of the smelt mill are located alongside the southern side of the beck, in the lee of a natural bluff. The remains of the mill are centred on a level terrace measuring approximately 15m by 20m, lying 15m south of the beck. Between the terrace and the beck there is a circular hollow surrounded by an earthwork. This has been interpreted as the wheel pit, which contained a water wheel to provide power for the smelting furnaces. The wheel was powered by water probably brought along wooden channels, known as launders, from further up the beck. To the east of the terrace there are further earthwork remains of the mill complex. The precise nature of these is currently unclear. On the slope to the south of the terrace there are areas of waste from the milling process, which will retain important technological information about the smelting on the site. The visible waste includes slag and fragments of malachite and covers an area of approximately 10 sq m.

ASSESSMENT OF IMPORTANCE

Copper was extracted in Britain intermittently from the Early Bronze Age (about 2000 BC) until the early 20th century, after when the industry was confined to by-product production and small scale reworkings of mines and

dumps. There is very limited evidence for copper mining before the 15th and 16th centuries, and most known sites are of later date, principally of the industry's 18th and 19th century peak after it had been revitalised by developments in smelting technology. In the 18th and early 19th centuries, as perhaps it had also been in prehistory, British production was important on a European scale.
The smelting of copper to produce pure metal was a complex process involving prolonged and repeated roasting (heating without melting) before the roasted ore was broken up and melted to form a matte (a solid mass of copper and iron sulphides). This was followed by further roastings and remelting to refine the metal. Due to the multiple processes, the consumption of fuel was great, and smelting has typically been located close to fuel sources rather than to the mines. The use of the reverbatory furnace was developed in the late 17th century and dominated copper smelting from that date. Early reverbatory furnaces consisted simply of a barn-like building containing the furnaces, with chimneys projecting from the outer wall. The late 18th and 19th century smelt mills were often larger complexes containing several smelting furnaces and roasting furnaces for preparing the ore, together with systems of flues, condensors and chimneys for pollution control and the recovery of sulphur. During English Heritage's national evaluation of the copper industry, 130 sites were assessed. This is a highly select sample of the numbers of sites that historically existed in England; although there are no national estimates, for the south west alone an estimate has been made of over 10,000 sites. It is considered that protection by scheduling is appropriate for less than 50, with alternative means of protection or management being considered more appropriate for the other nationally important sites.

Despite its demolition, remains of Whashton smelt mill and associated features survive well. The first mill on the site is early in date and the monument will preserve important evidence of the development of an early small scale smelting operation. The waste debris can also provide further significant technological information.

MONUMENT INCLUDED IN THE SCHEDULE ON 20th July 2001