

31st January 1988
Thornthwaite Mines

Meet Leader: D Blundell

18 Members and non-members assembled at grid ref NY223360 shortly after 10:30am on a blustery but dry day.

Those present were:-

Dave Blundell, Dave Bowers, Warren Allison, Ian Tyler, Dave Banks*, Bill Vaudrey*, Clive Barrow, Steve Clark, Anton C-P-Thomas, Sheila C-P-Thomas (& Imogen), Paul Timewell, Eric Curzon, Chris Moore, Graham Hodgeson, Daniel Capre*, Jonathan Capper, Judith Aston and Paul Ellison* (*signifies non-member).

Copy of information handout enclosed with this report.

Ian Tyler led off a small group (of 4) to tackle the level at Ladstock West Vein, on the north side of Comb Beck. The main party entered Rachel Wood Level, for the pedestrian stroll around the level with no volunteers forthcoming to try the climb up into the stopes above the level on the Francis Vein. On exit the chicken wire mesh flap on the barricaded level entrance was secured. The forestry road was regained and as no members expressed any interest in examining the old open stopes on the outcrop of the Rachel Wood Vein Approximately 250' above on the clear-felled fell side, the party followed the forestry road round to the bridge over Comb Beck and headed east down the footpath on the north side of Comb Beck. Ian Tyler had by this time arranged a number of forestry thinnings over the 6' deep flooded sump immediately inside the portal of the level on the north side of the Beck, but only 2 or 3 members availed themselves of the opportunity to visit the forehead of this 25 yard long trial.

After lunch, taken on the banks of the Comb Beck, the party crossed to the south bank to examine the old (pre-gunpowder?) workings situated just above beck level. Entry is gained via an entrance cut/stope, to this narrow twisting level. A shallow dry sump (12' deep) is easily crossed by bridging, the total length of the level being approximately 50 yards long, although the far end is blocked by what appears to be fine material that has run from a (filled?) shaft in the wood above. Approximately 2/3 of the way along the level, an understoped area gives access into a sub-level beneath, (forestry thinnings span this void). Ian Tyler had placed a number of bolts in the footwall (right hand) side of the level and a ladder and rope were lowered down. The pitch, 20' long, gives into a very muddy sub-level, with a small dig revealing the head of a further 30' pitch, a couple of bolts were placed, but the descent was left for another day. Ian Tyler and Warren Allison emerged from the level well plastered in mud at 4:30pm.

In the meantime, an attempt to keep the troops amused whilst the rather limited action took place in the narrow level, the meet leader offered to lead any members $\frac{3}{4}$ mile upstream to view the impressive remains of the mine dam (30' high) spanning the gorge of the Comb Beck. This suggestion met with complete disdain, curled lips and sneers being the order of the day.

Frustrated at the lack of visible progress and having exhausted the rather limited possibilities of the area, the members of the group began to drift away in twos and threes.

Special mention must be made of Anton C-P-Thomas and Paul Timewell, who returned to assist with gear carrying, Ian Tyler and Warren Allison for getting plastered in mud, in an attempt to stimulate interest, unfortunately they (& I) failed completely.

D J Blundell 1st February 1988

Footnotes:-

1. I would suggest that there are insufficient mines available in the Thornthwaite area, to warrant the inclusion again of Thornthwaite on the meets list, other than on an evening meets basis (although the distance one has to travel mitigates against even this suggestion).
2. There is a case for an enlarged description of the meet being included on the meets list. Of those attending, only 2 took the trouble to telephone in advance to ascertain the extent of the workings assessable and yet there appeared to be a general expectation of a meet similar to, for example, Greenside, where the group enters the workings at 11am and exits at 6pm rather than that which exists at Thornthwaite, that is, small trials.

D J Blundell 1/2/88

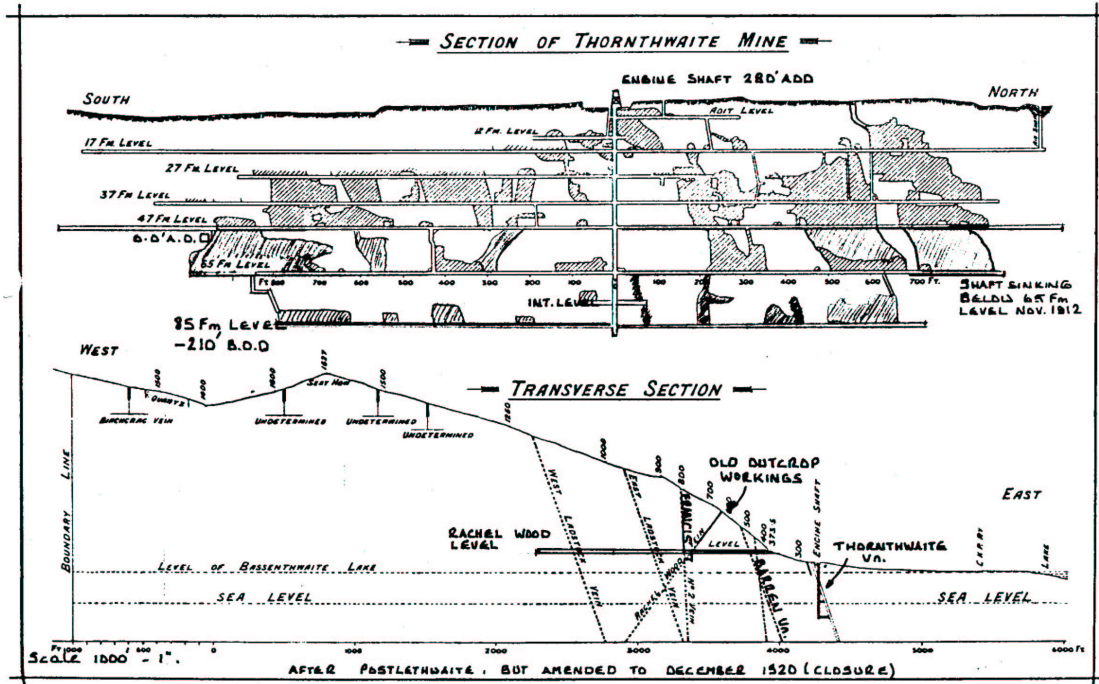
Thornthwaite Mines.

Geology.

In the Thornthwaite Set, in an area about $1\frac{1}{2}$ miles long, by half a mile wide, there are at least four veins, known from West to East as, Ladstock West, Ladstock East, Rachel Wood, & the principal vein, Thornthwaite. They all trend in a general NNW/SSE direction, through the Skiddaw Slate series, which comprise of dark sandstones & shales. The Thornthwaite Vein consists mainly of smashed rock, similar to the country, with little quartz. The economic minerals are galena, & blende, in the proportion of 1:2. The vein widths vary considerably, frequently 20 - 30 feet across, but up to 50 feet in places. It is reported that the silver content averaged about 10 ozs of silver per ton of pig lead, which increased slightly with depth.

Mining.

The engine shaft on the Thornthwaite Vein is situated immediately adjacent to the old A66, in the garage premises, 200 yds South of the fourth milestone from Keswick. The shaft collar is 280 feet Above Ordnance Datum, & has levels from it on the vein at 12, 17, 27, 37, 47, 65, & 85 fathoms from surface, making a total depth of 490ft, (see section). The vein has been worked for approximately 900ft North of the shaft, to an air shaft marking the Northern limit of the mine. To the South of the shaft, the vein has been explored for over 1300 ft. Most of the ground above the 65 fm level has been stoped out prior to 1912. At the time of closure (December 1920) the orebody had not been bottomed.



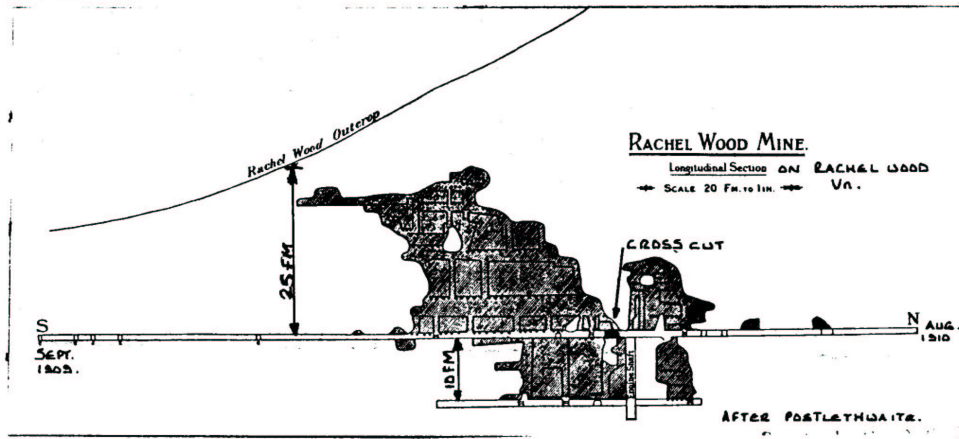
Rachel Wood vein has been worked at outcrop, high up in the wood. These workings are very old, & fairly small. The vein fades to the West. The majority of the ore produced by this vein was via the Rachel Wood Level, a cross cut driven in 1875, West into Seat How, from an elevation of 366ft AOD, for a distance of 540 yards. The level cut the Rachel Wood vein (& Francis Vein) at a distance of

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length of 90 yds, to a maximum of 25 fms above the level, & by means of a sump, to a depth of 10 fms below. The continuation of the cross cut to the West failed to prove ore in bulk, although cutting the probable position of both the East & West Ladstock Veins. At the time of closure of the mine, development was suspended (See transverse section).

The old Beckstone Mine, abandoned about 1860, lies $\frac{1}{2}$ mile North of Thornthwaite. A little galena was got here from a vein which may be a Northerly continuation of the Rachel Wood Vein. The mine was worked by levels & bell pits across the Eastern face of Barf, & around Beckstones Gill.

The Ladstock Veins (East & West) have been worked on a small scale at the Ladstock Mine, on the South side of Comb Beck. This mine began in pre-gunpowder days. At the beck, the veins are about 100 yds apart, & appear to be between 2, & 4 ft wide. The mine was worked by levels & open stopes for galena, & is still partly accessible.



History

In 1848, Thornthwaite mine was already 27 fms deep, when the Keswick Mining Co. re-opened the mine, & sunk the shaft a further 10 fms, to the 37 fm level. The dumps at Beckstones Mine were re-worked, but operations only lasted for 6 years. In 1873, Mr William Francis reopened Ladstock Mine, & formed "The Keswick United Silver Lead Mines Co. Ltd." Thornthwaite mine was reopened, & in 1875, the driving of the Rachel Wood Level commenced, but was abandoned before reaching the vein. In 1881, the leases passed to Mr J B Lobb under the name of "The Cumberland Lead Mine Co." The shaft was deepened to the 47 fm level, & the dressing floors reequipped. After the death of Mr Lobb, (around 1893), Messrs F W Crewdson & Anthony Wilson took over the lease, under the title of "Thornthwaite Mines Ltd." The engine shaft was sunk to the 65 fm level, & again, in November 1912, sunk to the 85 fm level. In 1901, the Rachel Wood Level was continued Westwards, to cut the vein. In 1920 (December) the mine was temporarily closed, due to a slump in metal prices, but was fated never to reopen, the Abandonment Plans being filed by John A Hill, Surveyor to the Weardale Lead Co, of Co Durham, on 14th June 1924. In its latter days, between 1894, & 1913, the mine employed an average of 70 persons.

Output.

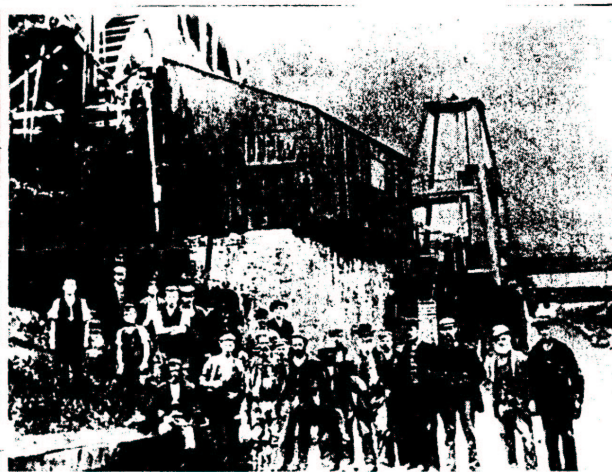
From 1870, to the end of 1918, the total outputs were:-
 Blende, 15682 tons, averaging £5 15s 5d per ton, with up to 50% Zinc.
 Galena, 10987 tons averaging £10 3s 0d, usually dressed up to 81%.
 For the period 1870-1918, galena formed 41.2% of the total output. The maximum yearly production of galena was in 1911, when 890 tons were produced, & for blende, the best year was 1905, when production was 1099 tons.

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In its latter days, (1919), the ore dressing was as follows:-

The ore was raised at the shaft to about 16ft above the surface, & tipped onto an incline for rough picking, before passing to 2 Blake-Marsden Stone Breakers, & 2 sets of Luhrig high-speed crushing rolls, which reduce the ore to 3/16 of an inch. The ore is then elevated to 8 sets of Davisons & Greens Luhrig Jigs. The rejects from the Jigs pass to a ball mill, & are then treated as slimes on Wilfey tables. The effluent from the dressing floors passed to Bassenthwaite Lake via a pair of slime settling lagoons covering 2 acres, between the mine, & the railway, (the present line of the A66) The concentrates produced were carted 1 1/2 miles to Braithwaite Station, on the former Cockermouth, Penrith, & Keswick Railway.

Power for winding in the shaft was provided by a 30 HP Robey steam engine, whilst the dressing plant was driven by a 45HP Pelton wheel, with a 45 HP suction gas plant as standby, for use in dry weather. An additional Pelton wheel of 8 HP was used to drive the slimes plant. Pumping of the mine was carried out by the usual plunger pump arrangement, driven by a waterwheel (on left of lean-to building on photo below) The mine was supplied with water from a 1 million gallon capacity reservoir on Comb Beck, above Ladstock Mine, & below the Whinlatter road.



THORNTHWAITE MINE ENGINE SHAFT C.1900



References.

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(Michael Moon 1975)
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by T Eastwood ARCS (HMSO 1921)
3. The Future of Non Ferrous Mining in Gt. Britain & Ireland, -Symposium, Institute of Mining & Metallurgy, 1959.
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5. Northern Cavern & Mine Research Society, Memoirs, Vol.2, No.3, Sept. 1973, "The Mines of Windy Hill, Woodend, & Barf", J D J Wildridge.
6. The Cumberland Mineral Statistics, 1845 - 1913. R Burt, P Waite, R Burnley, University of Exeter, 1982.

D J Blundell, 8th January 1988.