

FORCE CRAG MINE

The Last Working Lead Mine In The Lake District

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Introduction

Force Crag Mine is a Lead, Zinc and Baryte mine situated at the head of the Coledale Valley 2¹/₂ mile SW of Braithwaite near Keswick. The mine lies next to Force Crag which dominates to head of the valley below the slopes of Grisedale Pike.

There are two distinct areas of working visible on the surface - The High Force workings (NY 193214) and the Low Force workings (NY 200216) but internally these are connected by the Laporte Incline: a 1100 ft long tunnel which bridges the two workings.

There are nine levels driven in to the vein; 4 at Low Force and 5 at High Force with the main access being through levels 0, 1, 3 and the High Force level. A through trip can be made from the High Force Level down through intermediate levels, on to the Laporte Incline and out of level 3 in the Low Force workings, a vertical distance of around 180m (600 ft).

Brief History

It is thought that the mine was originally worked in Elizabethan times as an ore report of 1578 showed the existence of a silver lead vein at Coledale head, but there was no work of any great consequence until the beginning of the 19th century. The early workings concentrated on the Low Force area where Baryte, Blende and Galena (35 ozs Silver per ton of Lead metal) in the ratio 30:10:1 were extracted, since the upper part of the vein was mainly Baryte with subsidiary amounts of Psilomelane, which did not become saleable until the late 1860's

It was not until the early 1860's that any significant quantity of ore was produced and between then and 1865, 590 tons of lead and 1300 ounces of silver were sold. The price of Lead however fell and forced the mine to close late in 1865.

Two years later another company was formed to reopen the mine this time to extract Baryte and after renovating the mine, they were quickly into production in High Force. The ore was brought down from the High Force by slushing it down wooden flumes attached to the crag face, to the mill using water. A 2 mile inclined tramway then took the ore down to Braithwaite. Again the mine closed due to unstable prices in 1879, after producing 5300 tons of Baryte.

Several companies worked the mine between 1907 and the 1930's and work in this period included the starting of a new level - Zero Level.

In the 1930's the High Force workings which had not been worked since 1880, were reopened. The Derwent Fells Mineral Company drove the High Force Level exposing a massive deposit of Baryte. This however was not exploited until Tampimex Oil Products took over in 1939. They improved access to High Force by widening the existing track and by constructing an aerial ropeway to the mill 740 Feet below. By 1947 the company had extracted 35,000 tons of Barytes and had sunk 80 feet below the High Force Level. However the severe winter of 1947 forced the mine to close.

Two years later the mine was reopened by the Laporte Chemical Company, who started to drive an incline from No. 3 level to a height of 325 ft above No. 3, in order to connect with the High Force workings and drain the levels which had flooded during the winter of 1947. The company put in a 40 foot rise from near the top of the incline but withdrew from the mine in 1952 before the connection between the workings was made.

The mine lay disused for eight years until in 1960 the McKechnie Brothers of Widnes restarted the operation and soon broke through into the workings above. They mined Baryte from the upper workings, which were taken down the incline using heavy scrapers dragged by winches and assisted by water. The mine closed again in 1966 when the known reserves of Baryte in the high force were exhausted.

The mine was worked by several companies over the next fifteen years but none were successful. The last attempt was made by the New Coledale Mining Company in 1984, who intended to extract Zinc, Lead and Baryte from the lower levels. This operation was short lived however when a large collapse occurred on zero level and flooded the workings up to No. 1 level. The company left the mine in 1990, as the scale of the collapse was beyond the resources of the company.

Since the landowners - The National Trust, are not in favour of mining in the Lake District, it seems unlikely that the mine will ever reopen. There are also rumours that the remaining mill buildings will be demolished and the area landscaped. This will inevitably lead to the remaining entrances to the mine to be sealed to prevent access.

Work has recently taken place in No.1 level to guarantee that water can still escape from the level in the event a large collapse on the hillside above or the level portal collapses. This has involved 2 large diameter pipes being installed and the level being filled with 1m of concrete. This has encased the existing gate as well.

Recently the level between the top of the Laporte Incline and No.4 level as has also collapsed. It was passable with care in late August 1999, but may not be for much longer.

The Through Trip

Approach to the mine is made from the first small car park on the left hand side of the Whinlatter pass road outside Braithwaite. From here simply follow the access road for approx. 2¹/₂ miles to the head of the valley. Just before the Low Force mill below Force Crag, a track leaves on the left of the valley and climbs up to the top of Force Crag. After 100 m, an indistinct path branches off and leads rightwards round the hillside to the High Force Workings. The High Force Adit is to the right of the leftmost building.

(Note: All directions are given as if facing the rope or climb unless otherwise indicated.)

The High Force Level leads through a gate and for 150m to a collapse where a small excavated crawl on the right opens in to the vein. A small crawl back on ones self leads to the top of an engine shaft, which has a hand winch at the top. The edge of the shaft is loose! Back in the vein, a fixed rope leads up a 4m climb, up stemples and a loose collapse to a higher level. A small drop here and a traverse along a loose railway line over a hole, followed by short scramble up, leads to 3m drop on the left with a fixed polypropylene rope in to a lower level. Turning right leads to a 4 wagon ore train in a level on the left, behind which is the top of some wooden staging (described below), whilst left at the climb can be followed along the side of the vein to a small hole on the right. Immediately left through the hole leads to 4 m chimney down in to lower level (No rope in situ or belay). Right here (back under yourselves) leads to an access shaft with fixed wooden staging.

This position can be reached by turning right below the blue polypropylene rope, and walking behind the ore train to an access hole on to the wooden staging. The ladders on this staging are of dubious integrity! Descending 2 ladders reaches the same position as previously described.

Turning right at the bottom of the ladders, reaches a 10 m pitch down (fixed rope and 5m wooden ladder in situ, although the ladder is now very fragile!!). Right leads over plank bridge and other holes to traverse line over hole on the left (fixed polypropylene rope).

Further along level, a hole in wooden floor drops to a lower level. Left (facing deads) leads to large engine shaft on right and blind level. Right below wooden hole leads along easy level to 9 m pitch/ climb. (Belay to water pipes; climb down towards left to 2nd obvious ledge. The boulders on to which the pipe is resting are dubious.). A scramble from here down to the left, leads down to large level (No.4) with railway lines and a large ore bucket. Straight on here leads along vein to various levels and intriguing inclined tube on the left hand side. This tube can be followed down for around 40 m where it reaches some wooden staging (undescended) (Care should be taken in this tube as there is nowhere to hide from falling debris).

Back at the ore bucket, right leads to parallel level, and right again reaches top of rise with an original fixed wire ladder with polypropylene rope backup. Descending 4 m down this ladder (Note: 1 rung missing and normally very wet) leads to 3 fixed iron ladders and 30 m of fixed wooden ladders down to a level. All these ladders are normally wet especially for the last 5m. Following the level to the left past a bench with various artefacts leads to the top of the Laporte Incline. (This section of level has recently collapsed and the water level is now waist deep. This section should be treated with caution).

The incline can be followed down past ore chutes and bridges and the remains of the heavy scrapers used to lower ore down the incline, to a collapse near the bottom of the incline. Ascend the collapse rightwards for a short distance and descend a hole on the left back on to the incline. Follow this down to level No. 3. Turning left through pool, follow level out passing a short rise to No. 2 level on the right and the blocked Milkhouse rise on the left, connecting with No.1 level, to emerge on top of the spoil heaps behind the Low Force mill.

Note: Since the majority of the route from the High Force to the top of the incline is in a mined out vein there are large drops between levels. Most of the route described is either in levels offset from the main vein or on solid pillars of Baryte left between levels in the vein. There are also many false floors, some using wooden planking where the supporting pillars have been robbed. There have also been new collapses recently

especially on the level at the top of the Laporte Incline. Any further collapses here could block the level totally, preventing exit. It is possible to explore other parts of the mine on each of the levels, but no attempt has been made to describe other areas of the mine.

References.

John Adams	<u>Mines of The Lake District Fells</u>	Dalesman	1995
CATMHS	<u>Beneath the Lakeland Fells</u>	Red Earth Publications	1992

There are several other books on mining in the Lake District which make reference to Force Crag however the details are limited. Ian Tyler has written an in depth history of the Mine and the surrounding area, although I has been unable to reference this book due to its unavailability (i.e. out of print).

Date	Company / Miners	Areas Worked	Principle Ore Being Mined	Other Activities / Comment
1578				Ore analysis showed existence of Silver and Lead vein at Coledale Head
1755		?	Lead	Mine first investigated
1839	Messrs Airey and Cowper	?	Lead/ Zinc and silver	
1848 1863	Messrs Cowper, Walton and Douthwaite	2 & 3 already in existence Opened No. 1	Lead/ Zinc and silver	Mine abandoned
1867 1869 1873 1874 1879 1885 1886	Messrs Hall and Straughton	5 High Force 6 & 7	Baryte	Tramway constructed Operated by Force Crag Mining Company between 1876 and 1879 Mine closed Maintenance work carried out by the Force Crag Lead and Baryte Company Mine abandoned
1906 1911	Cumberland Mines Ltd	1, 2, 3	Zinc	Company liquidated by the bank
1912 1914 1915	Coledale Syndicate	1, 2	Zinc	Installed Elmore Flotation plant
1916 1923	Braithwaite Mines Ltd	1, 2 Started work on driving 0 level	Zinc	Open using subsidy during war years. After war ended, subsidy ceased and company went out of business
1930	Derwent Fells Mineral Company	High Force	Baryte	Drove High Force Level to find large reserves of Baryte
1939 1947	Tampinex Oil Products	High Force	Baryte	Built new Baryte processing mine (As exists today) Abandoned mine during bad winter
1949 1952	Laporte Chemical Company	3, Incline	Baryte	Drove Incline to connect No.3 level to No. 4 level
1960 1966	McKechnie Brothers	0,1,2,3	Baryte	
1967	Force Crag Mines Ltd of Toronto	0,1,2,3	Lead and Zinc	

1977	Force Crag Mines (UK)	0,1,2,3	Lead and Zinc	
1978 1982	RI Gunn / Braithwaite mining Ltd	Low Force	Lead and Zinc	Work stopped and the mine closed
1984 1990	New Coledale Mining Ltd	0, 1	First Baryte then Zinc	Collapse in 0 level forced the mine to close