



THE HUDDERSFIELD AND DISTRICT ARCHAEOLOGICAL SOCIETY

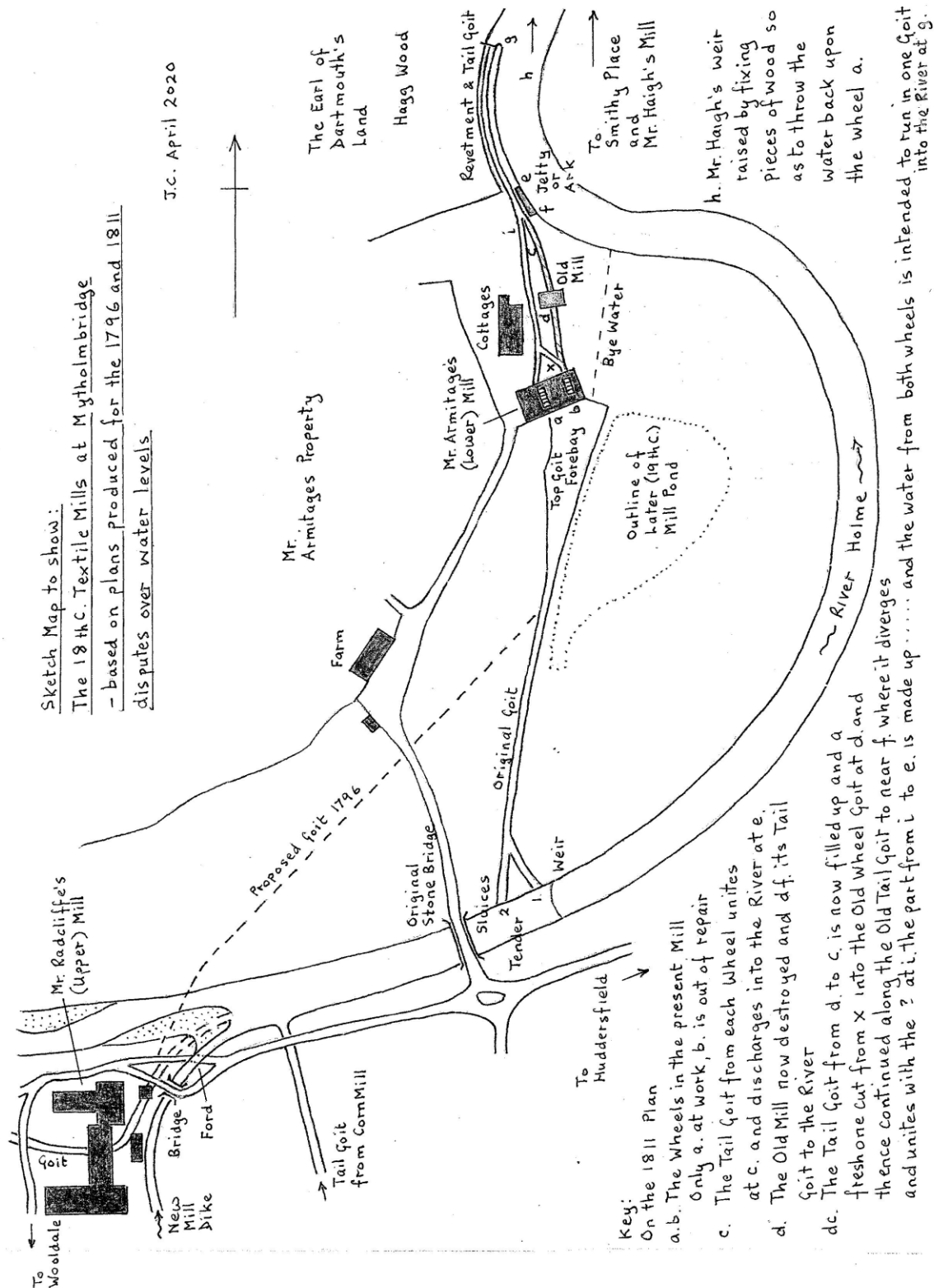
THE MYTHOLMBRIDGE LOWER MILL PROJECT

INTERIM REPORT

Having completed work on the corn mill at Mytholmbridge Farm, HDAS was invited by the owner of the Holme Valley Camping and Caravan Park to begin excavations on neighbouring land on the opposite side of the Holme Valley.

Three mills are shown in the vicinity of Mytholmbridge on Thomas Jeffery's 1772 map of "The County of York Survey'd". The first two, of which the corn mill is one and the other Mytholmbridge Upper Mill, lie close to the confluence of New Mill Dyke with the River Holme. The third mill which is Mytholmbridge Lower Mill was sited slightly down river, towards the village of Brockholes. Both Mytholmbridge Upper Mill, formerly known as Mr. Radcliffe's Mill and Mytholmbridge Lower Mill, formerly known as Mr. Armitage's Mill and then as Bridge Royd Mill were textile mills. Various issues in the history of these mills are discussed in detail from the late 18th C onwards in 'Wool and Worsit, A History of Textile Mills in the Holme Valley' by Michael Day. However, this investigation has largely focused on discovering what evidence has survived for the 18thC Mytholmbridge Lower Mill. Over the succeeding centuries it was to experience much change and expansion. However, these buildings were eventually demolished in 1975, while the old weir sluices and goits, which had fed water to an earlier mill on this site in the 18th C, had long since disappeared from view.

The first detailed evidence for the features at Mytholmbridge Lower Mill appear on a plan included in a copy extract relating to an award given in a dispute between Mytholmbridge Upper Mill and Mytholmbridge Lower Mill, dated December 1796. The dispute concerned water levels along this section of the River Holme, and it arose from the raising in height of the old weir to divert more water to the Lower Mill, and the resulting backwater along the river then preventing the wheel turning at the Upper Mill. These details are shown in the sketch map below and on the separate composite map for 1811.



Excavations in phase one involved cutting two trenches parallel to the river bank, and clearing boulders, stones and gravel from the river bed. Phase two involved cutting a slit trench in the field between the mill pond and the two sluices previously exposed, and shown on the 1796 award plan.

Phase three has involved investigating the feature marked as a well on the 1893 and 1932 OS map. This was initially uncovered with an open trench into which five sondages were cut. Other features were explored by means of test pits.

THE SLUICES

Sluice 1



Sluice 2



The trenches revealed two sluices to a depth of 170cm, both downstream of the confluence of New Mill Dyke with the River Holme. Any depth below this meant digging down into the river bed. Each sluice was double gated, and constructed in dressed stone. However they differ in their design. Sluice 1, nearest the weir, measured 400cm in length and has no provision for metal plates and ratchets to raise the gates. Instead, above the sluice inlets, there are two square headed metal spikes/nails set into the top stones. These are now heavily corroded. Part of a surviving gate, level with the top of the water inlet, shows a curved metal frame attached to the horizontal wood beams below, with a section in the middle which could have taken a rope/chain. Sluice 2, which is only a few metres upstream, measured 370cm in length and has more substantial top stones with a provision for metal plates and ratchets. These have since been removed but the lead filled holes drilled into the stonework remain, as do the grooves for the vertical ratchets. The remains of a surviving remnant of a wooden sluice gate, across the right-hand side sluice inlet, show a vertical beam in line with the groove in the top stone. The general design of this sluice is similar to the one at Thongsbridge, which supplied Mytholmbridge Upper Mill, and is repeated in those at Magdale, Honley. The top of a horizontal wooden beam, to which this central vertical post is attached, and its corroded ironwork, would suggest that much of this sluice gate has survived below the present river bed, which is now almost level with the top of the inlets. Using a probe, the depth of each inlet was investigated. At Sluice 1, the base of the inlet was found 40cm down below the exposed wooden beam of the sluice gate. With an exposed gap of 16cm this gave a total inlet depth of 56.0cm. At Sluice 2, the base of the inlet was found 57cm below the top of the sluice gate. With an exposed gap of 20cm above, this gave a total inlet depth of 77cm. Sluice 2 would therefore have permitted a greater inflow of water. At both sluices, the exposed gap above the river bed was completely silted up.

As to the differences in the design between the two sluices, this is possibly a consequence of Sluice 1, which is nearer to the weir being older and therefore the first to be built. As such it might date to a time well before the 1796 dispute award. Additional research is needed to help determine which century the design dates to. It was also the most comprehensively buried of the two sluices.

THE WEIR



Clearance on the river bed, during the dry summer of 2018 revealed the full width of the old weir, a section of which was previously hidden by both flood and current river deposits. These deposits contained pottery sherds from the 19th and early 20thC, dressed stone, brick, and even the fragments of leather boots, as well as modern detritus. Since the present river bed is now almost level with the top of the sluice inlets, which are as a consequence blocked up, we have assumed that flood deposits possibly from the 1852 and 1944 Holmfirth Floods have been deposited in this area thereby raising the level of the river bed to its present height. A two arched bridge just upstream, which is shown on the 1796 plan, had enabled vehicles in the late 18th C and early 19th C to reach the mill site. However, this bridge was washed away in the 1852 flood and was subsequently replaced by a footbridge. This may well account for the blocks of dressed stone scattered on the river bed near to the sluices. The present bridge on Lancaster Lane was built after 1852, and does not appear on the

1854 OS map. This provided convenient access to the coal yard at Brockholes station at a time when steam power had begun to replace that from the water wheels. For Mytholmbridge Lower Mill, this was possibly in 1867 when a boiler was ordered from Holt's of Folly Hall. This followed a previous reference to heavy rains in late November 1866, flooding the land around the mill and raising the level of the river to the point where the water wheel was in backwater and would not turn.

The weir was shown to have a cobbled surface with a gradual incline towards its crest from the upstream side, and a steeper decline thereafter downstream. Running across the weir parallel to its crest, on the downstream side, was a line of blackened wooden beams 32cm wide. These were found to have possessed a series of protruding iron stakes which are set into the oak of the beam. Only one has survived. The beams themselves were sunk into a slot between two parallel sets of stone. Their presence suggests that a wooden structure or boom was constructed along the crest of the weir to raise its height, and consequently that of the water level behind. This appears to have been a fairly common practice where the mills were sited along a section of river with little fall. The dispute between the Upper and Lower Mill, which terminated in the award dated December 1796, had been concerned with this same weir for Mytholmbridge Lower Mill having been raised. The consequence of this had been to raise the level of the river water ponded back between the two mills to a height sufficient to stop the wheel at the Upper Mill from turning. In 1808 and in subsequent years a similar problem arose due to the weir at Smithy Place being raised, but this time causing the wheel at Mytholmbridge Lower Mill to be stopped.

The line of the Mytholmbridge Lower Mill weir was shown to be dog-legged. From the right bank, it initially extends 580cm across the river at right angles, but approximately mid-stream becomes angled downstream for another 990cm to a point on the left bank below both sluices. This may well have helped divert more water into the sluice inlet at Sluice A. Indeed it is a design repeated in the later weir and sluice built immediately upstream of the confluence of New Mill Dyke with the River Holme. Across the crest of the older weir, on the section nearest the left bank, are several grooves in the stones, which appear to have been river eroded and follow the direction of flow. The grooves vary in depth from 3.5cm upstream to 8.5cm at their downstream end. A tentative theory is that these occurred at a time when the flow of water was concentrated on this side, either when it seeped under the wooden barrage, or when the river level was low. However, why the grooves appear especially on the left bank side is not clear, and the presence of an iron ring in the stonework of the embankment has even aroused speculation as to whether these may have been due to the passage of shallow keeled boats using the river and being tethered below Sluice 1. This is considered highly speculative, but is not entirely implausible given that the river bed was deeper in the past, and on the 1811 plan of this site a Jetty or Ark is marked at a point immediately downstream of the former mill, with the word 'Tender', upstream by the sluices and the original bridge. However, the precise meaning of these terms in the context of the site is unknown. A jetty can be either a defensive mole or landing stage, and an ark a covered floating vessel, whereas a tender can be a small vessel supplying stores. Further research is clearly needed but any physical examination of these areas is difficult, since that would rely on the river level being even lower than in the summer of 2018.

THE GOIT



A slit trench was also inserted into the field behind the two sluices in an attempt to find the junction of the two goits shown on the 1796 plan. At the time of Samuel Wormald's map for 1836 which depicts this area within the Township of Honley, this field was known as Great Dam Close, and by that time a large mill pond had been constructed alongside the original forebay shown on the 1796 and 1811 plans. This mill pond is fed by a goit taking water from a third sluice built upriver at the second weir. At what point in time the original goits had ceased to be used is unknown.

The removal of material from the top of Sluice 2 had revealed dressed stone to the rear, angled in the direction of the goit anticipated from Sluice 1. However, this implied a link much closer than that depicted on the 1811 plan. Also a previous probe survey closer to the sluices had revealed a stoney subsurface. Consequently the strip trench was set further back. Only one goit was located. This was the one leading from the oldest sluice which is furthest downstream. It was contained in a tunnel, 40-50cm below the surface and 200cm in width, the stone structure of which resembled that under the road surface on the bridge entering Magdale from the A616. This had been recently exposed during roadworks. To the side of the tunnel was a substantial earthwork composed of boulders, stones, rounded pebbles and clay-silt some 400cm in width. The location of this feature can be explained as a utilities trench for the Holmfirth U.D. Council Sewage Easement Scheme built before 1927. Its orientation makes it unlikely to be the earth dam retaining the large mill pond which was constructed sometime between 1811 and 1836. This presumably lies further north in the field near to an existing depression. That pond, which was larger than the one existing today, is also shown on Wormald's map, but not on a plan dated to 1811, which accompanied the second dispute over weir levels. On that occasion the dispute was between Mytholmbridge Lower Mill and the mill at Smithy Place, Brockholes. In extending the trench further west into the field, substantial deposits of clinker were revealed adjacent to and extending slightly beneath the top sides of the utilities infill to a depth of over 150cm. Below this clinker was a grey silty grit. This would suggest that, prior to the existing topsoil being deposited over the site and the work on a utilities pipe, a part of the field was used for the disposal of waste from one or more steam boiler rooms. This would also have had the further advantage of raising the level of the ground in an area prone to flooding. At the far west end of the trench, some 60cm below the surface, there were also traces of a possible drystone wall and a

dark, silt deposit extending to a depth of approximately 150cm. Further excavation would be required to confirm that this was the case, and that it was not well bedded and jointed bedrock.

The complexity of the site is added to by the second weir and third sluice upstream. These are adjacent to the dye house associated with Mytholmbridge Upper Mill, immediately above the confluence of New Mill Dyke and the River Holme. This weir appears to have been built at a later date, since it does not appear on the 1796 dispute award or on the 1811 plaintiff's plan in the second dispute with the mill at Smithy Place. Neither does it appear on the 1854 OS map, nor on a plan attached to the auction of Lot 21 for Mytholmbridge Upper Mill in 1885. However, it does appear on the 1893 OS map. Yet, the goit now associated with this weir was tentatively recorded on a plan attached to the 1796 award where it is described as a new goit made from Mr Radcliffe's Wheel Tail (Mytholmbridge Upper Mill) to the Forebay of Mr Armitages Mill (Mytholmbridge Lower Mill). This suggests that it was not built at that time, but was a proposed goit that was to be supplied by an aqueduct (presumably wooden) taking water from the tail race of Mytholmbridge Upper Mill across the River Holme. The reason for this proposed sharing of water appears to have been seen as a solution to the need for more water to be supplied to Mytholmbridge Lower Mill without it having to raise the old weir and have a detrimental effect on the wheel turning at the Upper Mill. It may also have been seen as possibly addressing the problems arising from seasonal variations in the river level. Additionally, it is worth noting that during periods of heavier than normal rain, this section of the River Holme was, and still is occasionally, contaminated with iron oxides in the water from New Mill Dyke. This is due to contaminated water escaping from the old mine shafts in the New Mill area and beyond. These minerals were not conducive to the washing and dyeing processes carried out at Mytholmbridge Lower Mill. Consequently this could be another reason why a second weir was at a later date constructed immediately up-river of the confluence of New Mill Dike with the River Holme. This directly fed water into the extra goit originally envisaged in the 1796 dispute award. Today it still supplies the mill pond which is now an ornamental feature of the campsite. The exact chronological order of all these features has yet to be determined, as well as a full explanation.

THE WELL



It was also intended that work would continue on the site to investigate features to the north of Lancaster Lane. These included a well, marked on the 1893 OS map, and a small pond sited above the tail race, as well as a low flat area labelled 'jetty' on the 1811 plan in the vicinity of the current bridge. This last feature is slightly up river from the point at which the mill tail goit emerges from a tunnel. Excavations of the older mill buildings shown on the 1811 plan are not currently feasible. In the 19th century considerable changes occurred and by 1893, the site leased by Sykes, Mellor & Co, was recorded as having 'a mill for scribbling, dyeing and finishing, along with the weaving shed, steam engine, boiler and some machinery, plus the house, farm buildings and land'. During the 1920's when the mill was owned by Mr James Lancaster and traded as J. Lancaster & Son, dyers and finishers, further changes were made with the addition of a new boiler house, a tenter house and a new scouring room. By 1970 even more changes had been made. This last mill was eventually demolished in 1975, and now any remains lie under the present permanent caravan site. As a consequence it and the earlier mills recorded on that site are not available for excavation.

However, from August 2019 to March 2020, excavations were conducted at the site of the well. Though shown on the 1893 and 1932 OS maps, this feature was no longer visible, having been filled in with demolition rubble and silt. The initial open excavation revealed the outline of a tank/cistern. Subsequent sondages revealed that the floor lies approximately 150-190cm below the top stones. Also revealed was a flight of stone steps at its southern end which turned through 90 degrees as they descend. The steps did not quite reach the floor which was 150 cm down at its southern end. At its northern end the floor was found to be lower at between 180- 190cm in depth, and was fairly level until it approaches the west wall, i.e. the back-wall of this feature, when it plunges into a trough over 290cm in depth, which is water filled and appears to coincide with a crude rock filled arch in the NW corner, the top of which is some 97cm down. The outside of the north wall was also explored by means of a sondage in order to find any dating evidence relating to its construction phase and to discover if there was any arch/tunnel facilitating the drainage of the "well". Potsherds, pipe stem fragments and glass suggested a 19thC date. No arch was found. Instead at a depth of 132cm below the top stones of the well, a stone and pebble surface with a horizontal shale slab was encountered. The slab emitted a hollow sound when tapped. In gaps between these stones the probe descended into material which was waterlogged. This coincided with the water filled trough running inside the "well" along its west wall. In contrast to this wall, the eastern wall which runs alongside the footpath is composed of relatively well dressed stone sets with larger top stones. The initial impression is that it is less old. Curiously the steps at its southern end are not tied in.

The western wall of the 'well' was found to be more crudely built and is bowed in its plan. It also appears to have been built in two phases since the two halves are not fully keyed in. Behind it is an even more crudely built revetment, which retains the bank above and drops behind the western wall to a depth of 77cm below its top stones. A cast iron, lead-run pipe was also revealed running along the top of the revetment, with a slight downward inclination of 3° to the north. A final explanation for this has still to be sought, and also for the tank/well. It should also be noted that this feature is in close proximity to a tunnel containing a concealed section of the tail goit, which returned water from the former water-powered mill to the River Holme, as first shown on the 1854 map.

The 1811 plan is different. Alongside the river near to the boundary with the Earl of Dartmouth's property, there is a feature labelled as "Jetty or Ark". It is also near where two tail goits once met at point c., one from an older mill described as now destroyed, and one from the 1811 mill with its two

waterwheels. This combined goit is then shown as having originally discharged its water at point e. However, an extension from point i. to point g. is also shown. This extends towards and beyond the feature marked as a “well” and appears to be open. Indeed it is not inconceivable that the “well” is a remaining fragment of that goit and that it has been adapted for a purpose as yet unclear. The crudely built revetment to the west side of the “well” may be the remains of the original retaining wall for that goit. This may explain why it descends behind the back-wall of the well and seems to predate it. At the closing stage of the excavation a test pit above the revetment/retaining wall revealed stones which were level and arranged together, hinting at the possibility of a paved way running above the revetment/retaining wall, and parallel to the original goit. A noticeable bench in the riverside can also be discerned running from above the well to a point further north above a tail goit arch. Here it joins the present footpath, which diverges to take a lower route as it heads south to a point between the river and the “well”, and the gap in the wall alongside the bridge. As a consequence, in this section the footpath would seem to run above and in line with the tail goit, using that part which has at some point been enclosed in the tunnel. This is replicated on the 1854 map, which also shows a footpath to the west of the open section of goit, then descending on to what must be a covered section. However, no footpath is shown on or near the intended goit, on the 1811 plan, where the goit appears to remain open along its full length.

THE TAIL GOIT/RACE



The dimensions of the tail goit tunnel and its open section also remain to be explained. Not only does the open goit extend a considerable distance downriver, but it is also noticeably wider than the tail goit tunnel. The arch insofar as it could be exposed measured 230cm across, whereas the wall it is set in, which is of finely dressed stone blocks, is 590cm across. In contrast the open tail goit measures 700 cm across. At the eastern end of the arch wall, an additional 85cm is provided by a long wall separating the open goit from the river. This wall is poorly tied in and is built of crudely dressed stone with occasional blocks of well-dressed masonry, re-used from some previous structure. Occasional iron ties have also been used to strengthen it. On its western side the arch wall ends in a vertical drop which exceeded the depth of the probe. There is therefore a shortfall of 110cm between this end and the width of the open goit, as well as with the revetment wall. However, as previously stated the 1811 plan shows a working mill with two water wheels and two goits which then combined to run as one towards the jetty or ark and an earlier exit at point e., (shown on the sketch map). The plan also shows that it was intended that the combined goit would then be extended to travel beyond point e. in order to emerge at point g., once the original exit had been filled in. This could explain the extra width provided by the open goit today, but not the lesser width of the arch and tunnel.

The limited examination of the gap/shortfall, given the time left before the Covid-19 lockdown coming into effect, revealed a mixture of stone rubble and yellow clay in the space beyond the arch wall. It was noted that a projected line extending from the high retaining wall alongside the open tail goit towards the site of the former mill, whilst maintaining the same distance from the river bank, coincided with the fragment of a revetment behind the west wall of the "well". This has led to some speculation as to whether the shortfall could be part of the original wider open channel, now filled with rubble, and whether the "well" was an additional feature built into the side of the tail goit extension, shown as intended on the 1811 plan, after this had been replaced by the tunnel.

Downriver of the arch wall, the tail goit retains its full width but shows signs of considerable damage. Large sections of the revetment wall have collapsed and the river bank is severely eroded. The wall separating the river from the open goit is also broken through in places before it reaches the river island, with large stone blocks having been displaced. However, there still remains a section of the retaining wall, of considerable height, which supports that part of the river bank and its footpath. The footpath climbs upwards at this point in the direction of Smithy Place, the next settlement down river on the left bank. At the same time, below this there is evidence of considerable river deposition, plus infilling from collapsed sections of wall and sedimentation in the back water now present near the tunnel entrance. The key stone to the arch forming the tail goit outlet/tunnel is 98cm below the top of the outlet wall. Today most of the arch is hidden and there is only a gap of 20cm between the key stone and the sediments below. These sediments have accumulated only in the tunnel and that part of the open tail goit around it. Extending back from the outlet wall, above the tunnel, is a surface of compacted stones covered over with soil/silt, some of which is possibly derived from flood deposits. This surface is initially level but then rises towards the present day footpath.

Local tradition maintains that the open goit was divided into a series of basins by shallow weirs, to provide washpits. When water levels are low, raised bands of stone rubble can be seen extending across the goit, in addition to considerable random stone in between. However, the high retaining wall has collapsed along most of the left bank, and as such the material now seen in the goit could

well represent infill. The length of this section is also considerable and exceeds that shown on the 1811 plan and 1854 6 inch OS map. Its present length does however appear on the 1893 25 inch OS map, where the wall separating the river from the goit joins up with what seems to be a linear river island colonised with trees and shrubs. A possible explanation was a need to ensure that water issuing from the enclosed tail goit joined the main river at a lower level downstream, thereby reducing any ponding back of the water in the event of higher river levels. On the 1811 plan it mentions in the key that water had earlier re-entered the river further up-river at point e. The point of discharge then appears to have been moved to point g., as shown on the 1854 map, and eventually it was moved even further downriver to a point shown on the 1893 map. The low gradient to the river along the section from Mytholmbridge to Smithy Place had long presented a problem for water- powered mills. What potentially exacerbated this problem was the raising of the river bed due to the accumulation of considerable stone, as well as human detritus possibly following on from the several serious floods. Evidence for the raising of the river bed and that of the goit is evident from the earlier trenches where it was shown that the sluice gates, as well as the tail goit arch were now largely buried. Whether such a policy would have helped relieve the ponding back of water following flood surges or the occasional raising in height of the Smithy Place weir is unclear.

In general it is evident that further research into the well and the adjacent goit is required in order to seek an explanation for the full purpose of each feature, including the extension to the tail goit. Without additional factual evidence the investigation lends itself to considerable speculation, which interesting as it may be, is not sufficient in itself.

Finally, I would like to thank all those members of the Society involved in this investigation, without whose efforts, evidence would not have been found. These have included at various times, John and Meryl Auty, Alan Brooke, Colin Dunn, Chris Hardy, Andrew Nocon, and Robin Stocks, but especially Alan , Andrew and Robin who persisted through both good and inclement weather over the many months if not years. I should also like to express my gratitude to the owners of the site, Phil and Hazel Peaker, as well as to Ben and Naomi Humphreys, for having granted their permission and for their patience and advice. A full report, with accompanying maps, plans, section drawings and photographs, as well as details of the finds, will be placed in the Society's archives.

John Cross

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