Heritage Impact Assessment for the proposed access track to March Haigh Reservoir, to accompany the planning application.

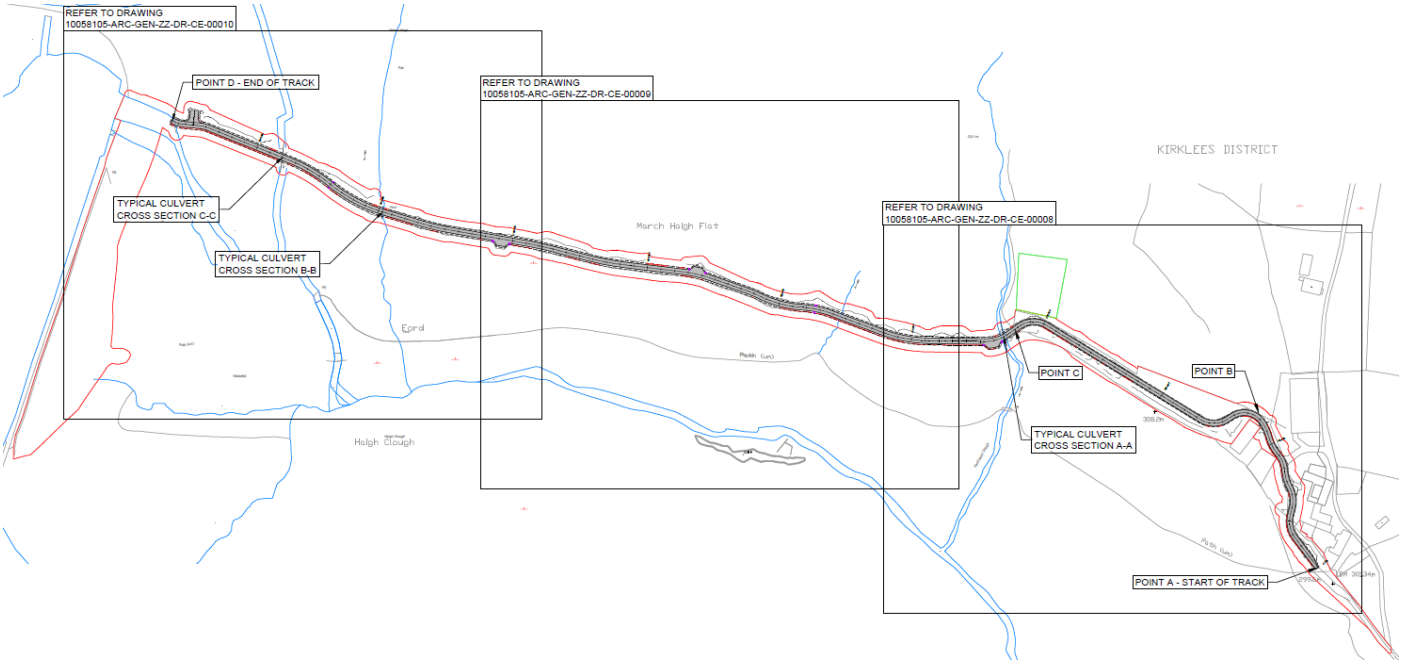


Fig. 1; Red line plan showing proposed access track to March Haigh Reservoir

Planning application for the construction of a permanent vehicular access track legally required as 'Measure in the Interest of Safety' under the Reservoirs Act for essential safety works, ongoing inspection and emergency access and the erection of fencing at March Haigh Reservoir, off Blake Lea Lane, Marsden, Huddersfield'

Waterway:	A reservoir for the Huddersfield Narrow Canal
Heritage Based protection:	The reservoir and its associated assets are not listed, but the proposed access track passes close to a listed barn and farmhouse at White Hull Farm. The area is covered by a SSSI, and further protected as a part of 'the South Pennine Moors Special Protection Area'
Report prepared:	14th March 2023
By:	Tom Woodcock, CRT Heritage Advisor
Previous Heritage reports	**Wells M** (2023), March Haigh Reservoir archaeological desk-based assessment, West Yorkshire Archaeological Services (WYAS)
	Woodcock T (2022), Rapid Heritage Assessment for March Haigh Reservoir
	Jones J (2011), CRT Heritage Assessment

Contents

‘

Introduction

This report considers the heritage impact for works contained in the planning application for a new permanent access track, and stock proof fencing around the reservoirs dam. The track broadly follows the line of the temporary track constructed and then concealed with recovered fill and seeded; it deals with and discusses the area contained within the red line plan (figure 1, cover picture).

This document has been produced in accordance with section 16 of the national planning policy framework (NPPF), and the Kirklees Local Plan (adopted Feb.2019) to be read alongside an application for planning permission and its supporting documents submitted on behalf of the Canal and River Trust.

The access track will provide both maintenance and emergency access to March Haigh Reservoir, one of ten reservoirs built for the supply of water to the Huddersfield Narrow Canal. The Canal fully opened in March 1811, but significant construction on its reservoirs continued until at least 1840, with ongoing periodic works until the present day.

A full justification is provided in the Justification document supplied with the planning application.

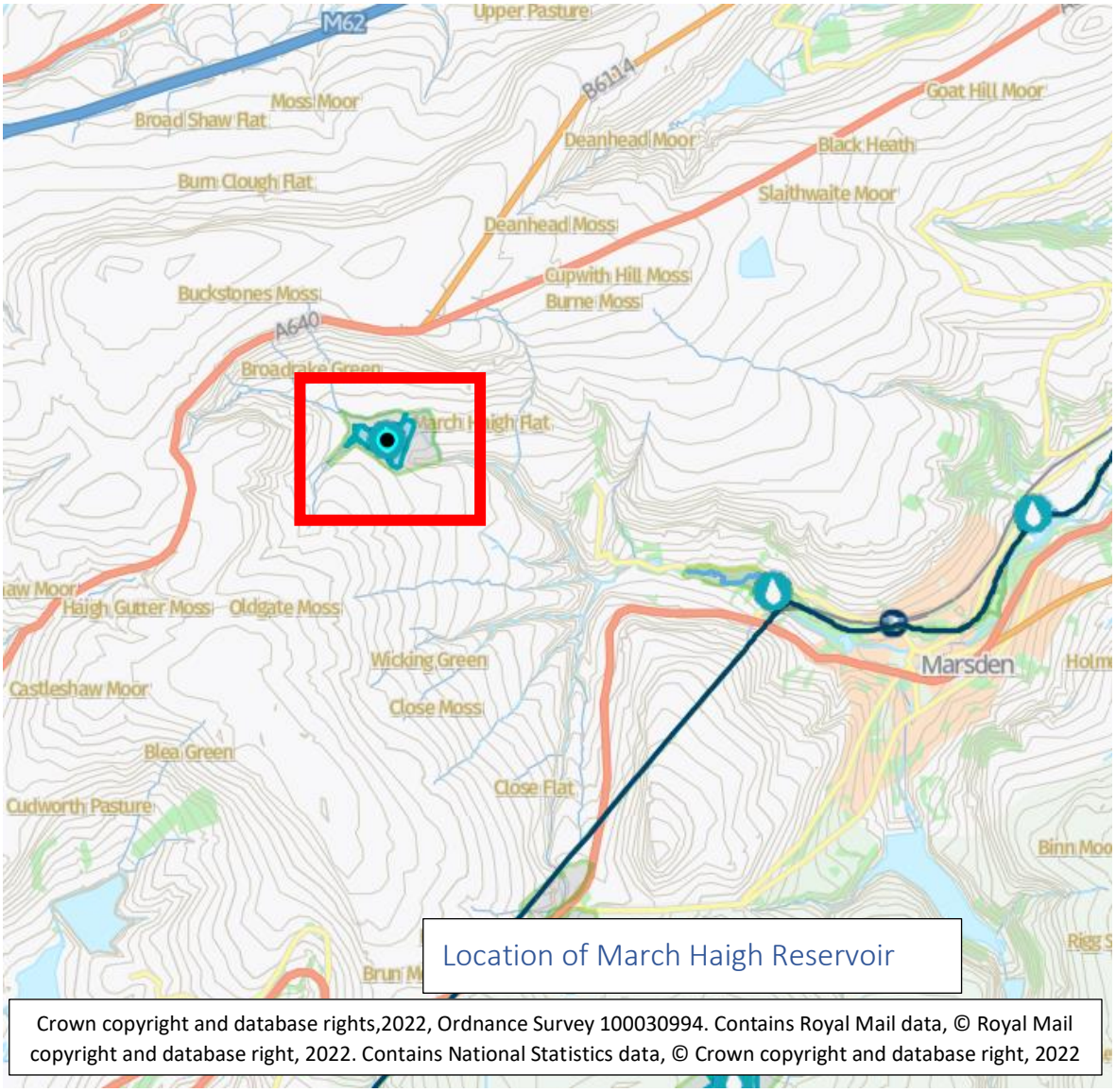
This Heritage Impact Assessment has been prepared by Tom Woodcock *MscCHE.* Heritage specialist for the North West region, High Risk Asset works and Priority Projects for the Canal River Trust.

Location

The reservoir is remote and difficult to access, built in protected peat moorland in the shadow of March Hill. Its approximately 3.5kms North-West of Marsden, immediately East of ‘March Hill’ and South of ‘Buckstone Slack’.

The nearest accessible road for the reservoir is Blakely Lane which effectively ends at White Hull Farm to the South-east, where the proposed new access route will link.

In the Metropolitan district of Kirklees, West Yorkshire, the reservoirs’ location is better illustrated with plan 1.



Route Description

The proposed route follows the same route as a track built and then covered up in late 1990's, granted planning as a temporary route to the reservoir. It begins in the farmyard of White Hull Farm, initially passing alongside fields before it becomes peat moorland.

The late 1990's temporary track was built to a 3m width, but it's not considered sufficient for the vehicles that need to access the reservoir for essential repairs and maintenance. The track is also of unknown condition and although its route is broadly known its exact line is not.

The route follows a grass and peat moorland, much will have been previously disturbed for the previous track but the increase in width requires further excavation.

There are two existing culverts to cross, both are modern piped structures, and both are likely to need replacing.

Background History

March Haigh is one of ten reservoirs built by the Huddersfield Canal Company to supply their new canal with water early in the 19th century.

The Huddersfield Canal was first surveyed by Nicholas Brown, and designed by Benjamin Outram, his report was submitted in October 1793. The Act of Parliament was granted in 1794, within which the company were compelled to build reservoirs to hold at least 20,000 locks of water, with no water to be taken from rivers except in times of flood.

Built as a narrow canal, its over 19 miles long with 74 locks and includes Standedge tunnel; 3 miles and 176yds long it was the longest, most costly and likely most difficult canal tunnel ever built. It took years longer than expected and brought the canal company close to failure. The tunnel (and thereby the full length of the canal) was not fully opened until 26th March 1811, with its official opening on the 4th April 1811. Reservoir building and extensive rebuilding works on the canal (due to shoddy workmanship) continued until at least 1840.

The canal company's minutes suggest that by 1806 five reservoirs had been built, March Haigh however was probably the last to be started. Its first mentioned in the minutes on the 17th February 1832, when it was resolved to buy fifty acres of land on or near March Hill for making a new reservoir.

Whilst we haven't got an exact start date for March Haigh, the minutes and a date stone on the valve tunnel suggest it was started (rather than completed) in 1832.

On the 4th September 1835, there's mention of the ongoing enlargement of the reservoir, with the engineer instructed to also raise the bank on Swillers Moss Reservoir by a further two yards (today Swellands Reservoir).

On the 28th June 1838 March Hill reservoir is reported to be nearly complete and fully available for the use of the canal but by 15th October the same year, Mr Raistrict (the engineer) proposed to raise the dam four yards higher (and was instructed to proceed).

Final mentions of the reservoir in the company minutes are made in April and June of 1840 when is seems the need for water has become more pressing. The engineer is being chased to get the work done as quickly as possible by taking 'whatever steps he may consider necessary to ensure the early completion of work.'

It's assumed the reservoir was completed in 1840/1841 but works will (as they do today) have continued every few years indefinitely. We don't know if the provision for stop planks on the main spillweir were made in this last phase of enlargement being completed in 1840, or whether there is another (perhaps at the time the wave wall is added and dated in 1853).

In 1844 agreement was reached for the Huddersfield and Manchester Railway Company to buy the canal.

Further details of more recent interventions are given by an abstract of the BDS paper 'British Waterways' Reservoirs in appendix 4.

Immediate Context

The landscape linking the reservoir with White Hull Farm via the proposed permanent track is open, upper moorland. Despite already having a concealed track beneath the surface it provides the appearance of a natural peat landscape.

The new track begins at White Hull Farm yard, to the rear of two listed buildings, White Hull Farmhouse and White Hull Farm Barn, (statutory listing descriptions in appendix 1 & 2).

The track passes through the farmyard to the rear of the two properties, passing a modern stable block and follows an existing farm track north until it crosses 'Hard Head Clough', an existing gateway is currently blocked.

Passing through the gateway, the track crosses a modern piped culvert over Hard Head Clough and onto moorland. From here, although the general direction of the old track is known, and in some areas can be seen in the varying vegetation, its exact position is not well mapped.

After approximately 550m, the track crosses a second piped culvert over the reservoirs by-wash stream and travels towards the auxiliary spillway. The track will terminate before the bounds of the current spillway, with the creation of a turning point.

A further element of this application is to install new timber and stock wire fencing to keep livestock kept on the moors off the dam embankment. The Dam has been suffering considerable damage as cows walk across the soft earth of the embankment, preferring the relatively lush & soft grass that grows there. The line of the new fencing is 5m from the toe of the embankment, (to its eastern side).

The visual setting and views of the clough and the reservoir will be affected, and this is considered in detail in the accompanying Environmental statement, under chapter 'Landscape and visual impact assessment'.

Assessment Criteria in assigning Significance.

With regard to development proposals affecting the historic environment, Paragraph 189 of the National Planning Policy Framework states that *"in determining applications local planning authorities should require an applicant describe the significance of any heritage assets affected including any contribution made by their setting*".

Significance is defined within annex two of the NPPF as the value of a heritage asset to this and future generations because of its heritage interest that interest may be archaeological architectural artistic or historic significance derives not only from a heritage assets physical appearance but also from its setting.

In assessing significance, the following scale has been used in line with the requirements of the National Planning Policy Framework (NPPF; Chapter 16: 'Conserving and enhancing the historic environment', paragraph 189)

Significance	Type of Heritage Asset
High	Scheduled Monuments Listed Buildings (Grade I and II*) Registered Parks and Gardens Registered Battlefields World Heritage Sites
Medium	Listed Buildings (Grade II) Conservation Areas Heritage Assets identified as being of regional or local importance on the HER Sites identified within this assessment considered to be of regional or local importance
Low	Non-designated Heritage Assets recorded on the HER Previously unrecorded sites identified in this assessment and not considered to be significant
None	Previously recorded heritage assets or sites recorded in documentary sources now destroyed
Unknown	Potential but previously unrecorded sub-surface archaeological remains Historical sites or features identified through documentary evidence as part of this assessment

Table 1 Scale of Significance in line with NPPF

The assessed significance of heritage assets identified are listed below. For the purposes of this report, assets in or immediately adjacent to the proposed Development Areas 'red line plan' (fig 1) are included; a wider perspective is given in the accompanying archaeological desk-based assessment (Wells M 2023)

Heritage Assets, Significance & impact of the development

Heritage	Description	Significance	Impact	Discussion
Grade 2 listed White Hull Farmhouse	Labelled as item 21, on the plan provided in appendix 3; A two storey stone-built property with a double pitched stone flag roof. It has narrow stone mullioned windows, large stone jambs around original door openings and is dated in the main door lintel 1761. Its grade 2 listed, the statutory description provided in appendix 2.	**Medium** The building predates the reservoir and is recognised in its grade 2 listing as of National significance.	Less than substantial harm	The farmhouse is significant for its age and long term use and occupation for farming the surrounding land. The proposed track will pass the farmhouse to the side and rear following the existing track through the farm yard and at sufficient distance that it will have no adverse effect on the setting or structure of the property.
Grade 2 Listed White Hull Farm Barn	Labelled as item 21, on the plan provided in appendix 3; A two storey stone built property with a double pitched stone flag roof.	**Medium** The barn predates the reservoir and is recognised in its grade 2 listing as of National significance.	Less than substantial harm	As for the farmhouse, the Barn is significant as evidence of its use and that of the surrounding land for farming. The proposed track will pass to the rear following the existing track through the farmyard and at sufficient distance that it will have no adverse effect of the setting or structure of the property.
Area reserved for the site compound	Labelled 18, part of the archaeological site/monument 18 on the plan provided in appendix 3; Fields are included within a recorded monument for a three cell house, described as, *Hopwood, Marsden. Low Two-storey stone house of the mid-late 18th-century, with linear plan of three cells.*	**Unknown**	Unknown, but likely less than substantial	As part of a farm, this field is likely to have been included as part of the field use and setting of the farmhouse, rather than any specifically known archaeological resource buried beneath the surface. It will need to be included in the watching brief.
Find site adjacent to aux spill weir	Labelled as part of the archaeological site/monument 9 on the plan provided in appendix 3; Described as working sites at March Haigh Reservoir	**Unknown**	Unknown, but likely less than substantial	Two known and recorded sites where Mesolithic flints have been recovered. Flints comprised large knife, 3 scrapers, a microlith and 24 waste flints. 55 pieces of waste chert found nearby at March Haigh. Finds probably represent workshops of Mesolithic material, though some flints may be of later periods. Works close to these sites raises the possibility of finding archaeological items, but requirements for working in this area should be covered within the watching brief. The most likely finds (i.e. flint) are

				usually recorded, then recovered allowing works to continue after a short delay.
Reservoir embankment & associated valve tunnel	The main reservoir dam, or embankment was formed with a compacted clay core to form the watertight seal, and then overlaid with soil to form the gradient now covered with maintained grass. Constructed from 1832 and completed around 1840 it creates the reservoir to supply water to the Huddersfield Narrow Canal. Towards the southern end of the dam, a rusticated stone tunnel entrance (dated 1832) provides access into dam to open/close the valve controlling outflow from the reservoir.	**Medium** Of regional/local importance	Less than substantial harm	The dam is the main asset that forms the reservoir, which has an enormous effect on the character and appearance of the Valley. Proposals affecting the dam are the installation of a timber and wire fence along the toe of the embankment to stop cattle from accessing and churning the surface. Fencing already exists along the top of the dam, which blends into the longer views unnoticed, and this fence too is unlikely to look out of place or cause any physical damage to the dam. Posts will however need to be dug into the ground approximately 5m away from the toe (the east side) of the dam into potentially undisturbed ground; digging will likely require archaeological oversight to ensure any buried archaeology is identified and recorded.
The Auxilary spillway channel	The channel is a wide structure, built to take away excess water which cannot quickly be taken from the reservoir via the primary spillway. It is an essential safety feature, which in a storm event can prevent the reservoir rising above safe levels and failing. The structure is formed with a stone and concrete surface(apron) along a lower section of the dam, with the crest marginally higher than the primary spill weir such that it only runs when there is excess water to remove from the reservoir. It is in two clear build periods, one third (to the west) is built with a stone crest and apron, the water taken across a stone cobbled surface	**Medium** An essential part of the reservoir, of regional/local importance	Less than substantial harm	The spillway is of two clear phases, the original section built with stone sets, and the newer 1920's section extending the original with cast in situ concrete. The new track will terminate very close to the channel of the spill weir, at this point an informal & unreinforced stream cut through the peats and soil to the underlying rock. The track will come close to the newer 1920's section of the auxiliary spill weir channel but will not encroach on the structure.

	to drain. The remaining two thirds are constructed in concrete, the weir having been significantly enlarged in 1921. Water flowing over this newer section falls over the crest onto loose stone and aggregate fill before flowing away down the channel.			

Table 2; Heritage Assets, Significance & impact of the development

Unknown archaeological resource

The peat moors of West Yorkshire are rich in archaeology, with March Hill and its surrounding area already known to have many Mesolithic find sites.

The Mesolithic period is also sometimes known as the 'middle stone age', it's a period approximately 7000 – 10000 years ago when the area would have been semi-wooded with scrub and a prime hunting area for early humans. A Mesolithic encampment has been discovered on March Hill, one of the highest points in the area, which would have looked out across the Colne Valley; clearly people would have been travelling through and around the valley area.

The most common find for this locality are flint tools. Flint is not a local stone, but it was so good for making tools that humans would gather it further east and bring it with them. Larger pieces of flint were perhaps hewn in an evening as groups eat and prepared for the next day. Examples of arrow heads, scraper tools and knives have all been found, and still could be found anywhere there has been no previous digging.

A lot of the known sites were found in the first half of the 20th century by amateurs such as Francis Buckley. He's now famous, with many of his finds stored locally in the Tolson Museum. Part of his success was the sheer quantity of time he spent looking, but in most cases, he simply looked where the peat was naturally eroding at leats, streams and slips.

Archaeology doesn't concern only one period; the area is also thought to have a roman road. There have been many periods of occupation and activity, not least the building of the reservoir in the 19th century.

Conclusions

The area covered by the red line plan submitted with the accompanying planning application for a permanent access track has two known and recorded areas of archaeological interest (as recorded in the Heritage Environment Records) but passes through an area known to be rich in archaeological deposits generally.

Areas most likely to yield archaeological deposits are usually those that are difficult to occupy and have not been previously disturbed. Most of this proposed route to the reservoir has been disturbed during the construction of the in-situ 'temporary' access track, which was recovered on completion of the previous works (using materials removed from the site at the beginning of works).

The access track itself is therefore less likely to hold archaeological deposits, but items may remain where the peats and soils will be dug either side of the previous track to facilitate its widening or mixed in the material replaced on the temporary track.

T Woodcock CRT Heritage Advisor. Version 2.0

The area proposed for the site compound has greater potential for archaeological finds, but this too has been used in the past as a site compound and storage area.

Areas close to the auxiliary spillway channel, close to a known and recorded 'working' site at which flints have been found, and the area east of the dam where fencing is proposed, is thought to have the greatest potential for buried archaeology.

West Yorkshire Archaeological Services have been commissioned, and produced a comprehensive archaeological desk based study, and are in the process of writing the Written Scheme of Investigation (the watching brief).

The two Listed buildings, White Hull Farmhouse and its barn are of national importance, but the track will follow the existing track through the farmyard. The track passes only to the side and rear of the properties leaving their principle elevations unaffected. The Track passes at sufficient distance from the original fabric of these buildings (they've been extended in timber clad buildings) that any impacts from the proposals will be minimal.

References

Wells M (2023), WYAAS March Haigh Reservoir desk-based archaeology assessment

Jones. J (2011), British Waterways Heritage Assessment of March Haigh Reservoir

Hadfield C/ Biddle G. (1970), The Canals of North West England, Volume 2

Dutton D (2001), British Waterways' Reservoirs – the last 25 years Dams & Reservoirs, BDS, October

Mann.R (2021), March Haigh Reservoir, Reservoirs Act 1975 Section 10 Report, Canal & River Trust

A Book Of all the Acts Proceedings and Transactions of the Committee of The Huddersfield Canal Company

Appendix 1 – Statutory Listing description for White Hull Farm Barn

Official list entry

Heritage Category: **Listed Building**

Grade: **II**

List Entry Number: **1231227**

Date first listed: **11-Jul-1985**

Statutory Address 1: **BARN TO NORTH WHITE HULL, BLAKE LEE LANE**

'his List entry helps identify the building designated at this address for its special architectural or historic interest.

Jnless the List entry states otherwise, it includes both the structure itself and any object or structure fixed to it (whether nside or outside) as well as any object or structure within the curtilage of the building.

'or these purposes, to be included within the curtilage of the building, the object or structure must have formed part of he land since before 1st July 1948.

Inderstanding list entries *(https://historicengland.org.uk/listing/the-list/understanding-list-entries/)*

:orrections and minor amendments *(https://historicengland.org.uk/listing/the-list/minor-amendments/)*

Location

Statutory Address: **BARN TO NORTH WHITE HULL, BLAKE LEE LANE**

The building or site itself may lie within the boundary of more than one authority.

District: **Kirklees (Metropolitan Authority)**

Parish: **Non Civil Parish**

National Grid Reference: **SE 02601 12773**

Details

SE 026127 BLAKE LEE LANE (off) Marsden 4/35 Barn to North White Hull -

GV II

Mid C18 with later (1855) addition. Earlier part of coursed rubble with quoins and rough millstone grit footstone. Hammer dressed stone to later part. Pitched stone slate roof (old part lower). South East elevation, later part: large central doorway with lintel with inscription: Rebuilt 1855. To south is small doorway with large stone surrounds and tie-stones with carved lintel (reset) with inscription: 1670 IWITRWISSW 5674 Date refers to Julian calendar. Early

building has doorway with shaped lintel.

Listing NGR: SE0260112773

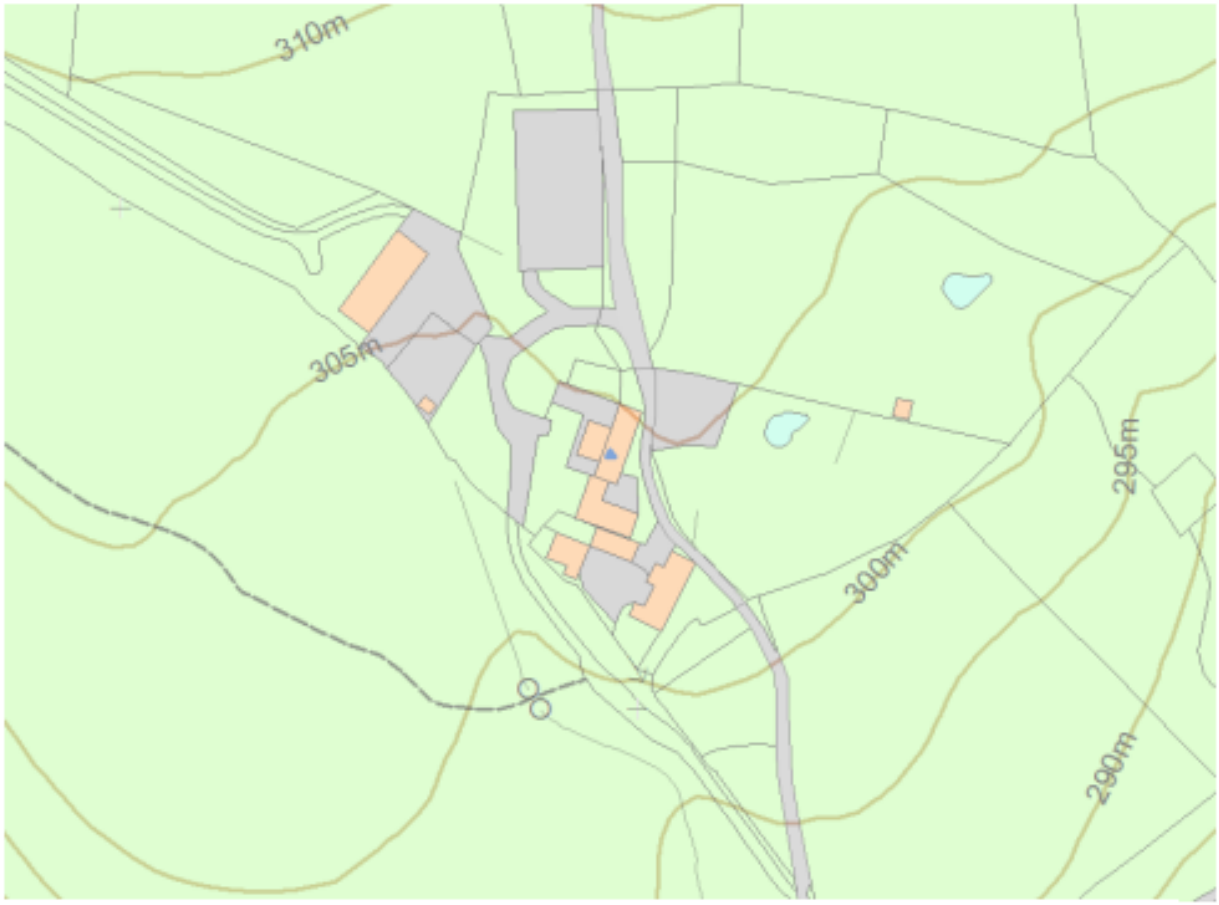
Legacy

The contents of this record have been generated from a legacy data system.
Legacy System number: **406314**

Legacy System: **LBS**

Legal

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.



Appendix 2 – Statutory Listing description for White Hull Farm House

Official list entry

Heritage Category: **Listed Building**

Grade: **II**

List Entry Number: **1231226**

Date first listed: **11-Jul-1985**

Statutory Address 1: **WHITE HULL, BLAKE LEE LANE**

This List entry helps identify the building designated at this address for its special architectural or historic interest.

Unless the List entry states otherwise, it includes both the structure itself and any object or structure fixed to it (whether inside or outside) as well as any object or structure within the curtilage of the building.

For these purposes, to be included within the curtilage of the building, the object or structure must have formed part of the land since before 1st July 1948.

Understanding list entries *(https://historicengland.org.uk/listing/the-list/understanding-list-entries/)*

Corrections and minor amendments *(https://historicengland.org.uk/listing/the-list/minor-amendments/)*

Location

Statutory Address: **WHITE HULL, BLAKE LEE LANE**

The building or site itself may lie within the boundary of more than one authority.

District: **Kirklees (Metropolitan Authority)**

Parish: **Non Civil Parish**

National Grid Reference: **SE 02617 12740**

Details

SE 01 SW BLAKE LEE LANE (off) Marsden 4/34 White Hull -

- II 1761 (datestone). Farmhouse. Coursed rubble (painted). Quoins. Plinth. Pitched stone slate roof. Two gable stacks (ashlar) with plinth and strings. Moulded footstones. Two storeys. South East elevation: Ground floor: entrance in modern porch with stone surround and deep lintel with chamfered reveals. I M D M Lintel has inscription: 1 7 6 1 Initials refer to Whitehead and Midwood fami- lies. Two 4-light stone mullioned windows (chamfered and recessed). First floor: two 3-light stone mullioned windows as above; one 2-light stone mullioned windows as above. North West elevation: two-storey lean-to extension with catslide roof; one 2-light stone mullioned window. North East gable:

Ground floor: small lean-to extension. First floor: one 2-light stone mullioned window.

Listing NGR: SE0261712740

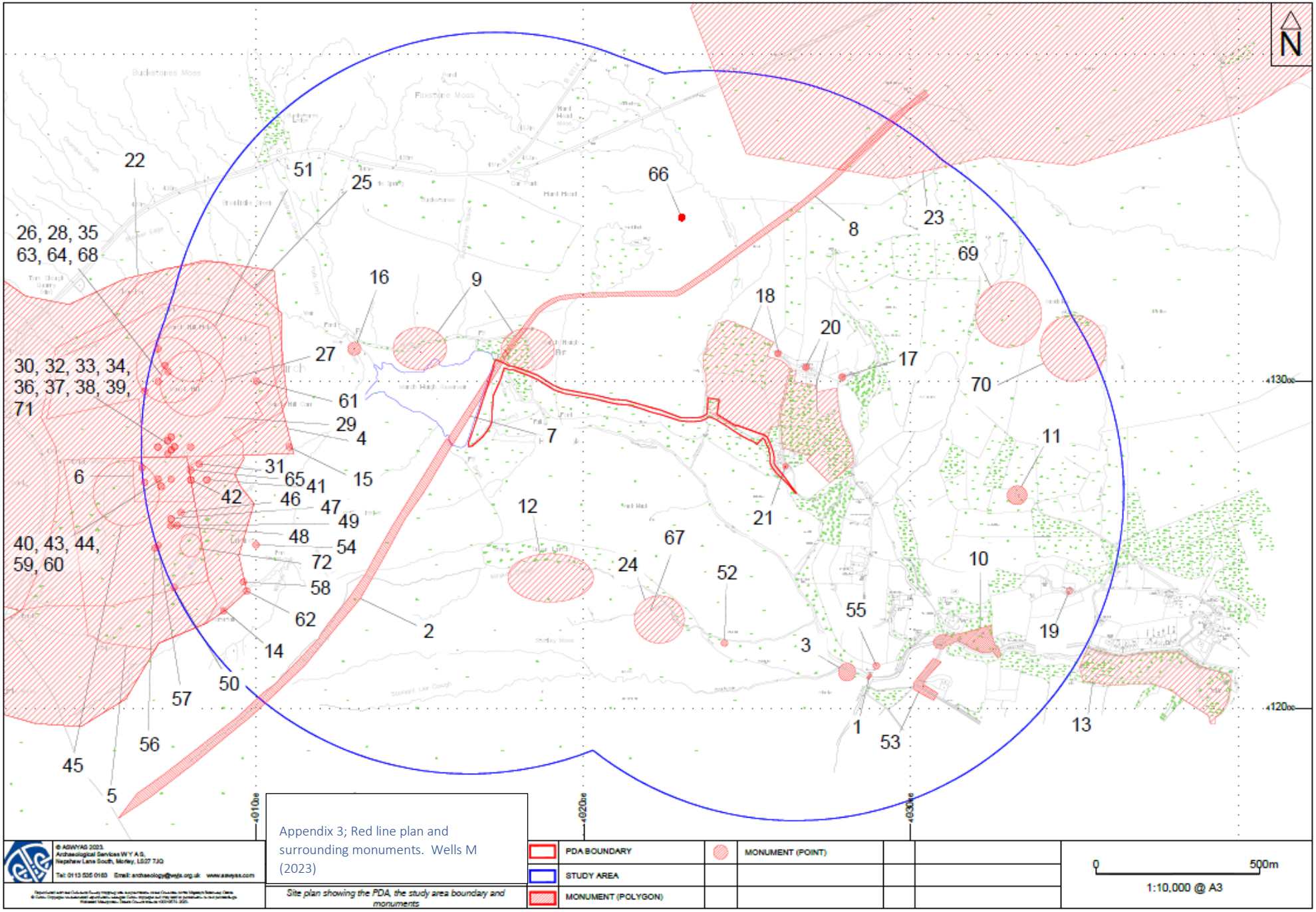
Legacy

The contents of this record have been generated from a legacy data system.
Legacy System number: **406312**

Legacy System: **LBS**

Legal

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.



Appendix 3; Red line plan and surrounding monuments. Wells M (2023)

Site plan showing the PDA, the study area boundary and monuments

Appendix 4 – Abstract of BDS paper 'British Waterways' Reservoirs; 2001

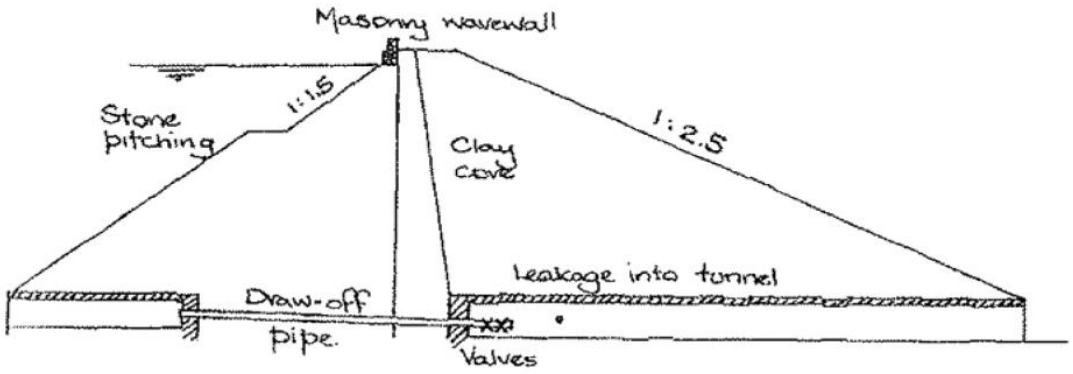


Figure 7. Section through March Haigh dam

farm track is 1.5k

The dam is 275m long, with a maximum height of 21m where it crosses a 35m wide steep-sided gully within an otherwise fairly shallow valley. Ground investigations show that it has a very sandy puddle clay core supported by a mixture of local cohesionless soils in the shoulders, sitting on a sandstone foundation. The upstream slope is extremely steep (about 1:1.5) but with a berm about 7m below dam crest level, (see Figure 7).

Prior to the recent remedial works the single outlet consisted of a masonry tunnel running someway from the reservoir under the upstream shoulder but not, apparently, as far as the core; this led to a cast iron pipe which passed through the core and discharged at the upstream end of a masonry tunnel running under the downstream shoulder. The only control valves were at the downstream end of the cast iron pipe.

Problems occurred in September 1997 when water was discovered leaking, under pressure, into the downstream valve tunnel, about 7m from its upstream end. The water appeared clear but was found to be carrying a small quantity of sand. Similar leakage had occurred 25 years earlier, but at that time the situation had just been monitored, with regular readings of the flowrate, temperature and alkalinity of the issue, the reservoir water level and its temperature and alkalinity, and rainfall. The flow then had gradually reduced over a number of years.

On discovering the leakage the supervising engineer asked for the draw-off to be opened to start lowering the reservoir water level but, as the operating valve was being opened, the flow came to an abrupt halt. Subsequently, by probing with drain rods from the downstream end, the blockage was found to be at the upstream end of the cast iron pipe but a CCTV survey revealed little about it.

The main spillway consists of a 3m wide masonry channel, with reservoir water being impounded 0.8m above its invert by timber boards. With the failure of the draw-off these had to be forced up by hand and removed, one at a time, as the reservoir water level dropped. Three 150mm diameter siphons were also brought to site and manhandled into position over the dam crest to assist in lowering the level and part of the original bywash channel was restored to divert flow, from about two thirds of the catchment, away from the reservoir. The three siphons, which needed regular attention to keep them flowing, finally stopped with reservoir level 7.5m below Top Water Level but, by that time, the issue in the valve tunnel had been reduced to about a quarter of its initial flow.

Prolonged negotiations then continued over vehicular access. Eventually permission was granted to lay a temporary track across the moorland to the dam which, although left in place, had to be covered up after the remedial work was completed.

Following a ground investigation it was decided to grout a 10m length of the dam crest on either side of the draw-off pipe using tubes-a-manchette, with two lines of holes at 1.5m spacing, 1m apart. Great difficulty was experienced during the grouting in of the grout pipes, because of the permeability of the rock foundation, and also during withdrawal of the casings, because of substantial grout loss in a number of the boreholes. Grout was noted to be entering the valve tunnel at the issue point from at least three boreholes and was also seen at the toe of the dam close to the entrance to the valve tunnel on one occasion.

To restore the draw-off, an exploratory shaft was sunk on the line of the upstream tunnel, through the silt and upstream shoulder, after the water that remained in the reservoir had been pumped out. On investigation, the blockage was found to be a wooden paddle, assumed to have come from a collapsed silt trap on one of the inlet streams, that had worked its way along the upstream tunnel and been flipped up over the entrance of the cast iron pipe by the force of the discharging water. To ensure this kind of malfunction could not occur again, a plastic pipe was connected to the upstream end of the cast iron pipe, grouted into the upstream tunnel and brought up within the exploratory shaft to 1m above silt level. A hydraulically operated valve was fitted at its inlet.

On refilling the reservoir, no leakage has been observed in the valve tunnel or elsewhere along the dam. Pore pressures in the downstream shoulder and foundation have continued to be monitored; piezometers with tips in the foundation reacted initially with the increase in reservoir water level but have stabilised, those in the downstream shoulder have shown little variation.

Dam crest levels had been monitored for many years prior to the works and had shown little variation. Unfortunately, the monitoring points were lost during the course of the work but, from an earlier spot level survey of the dam, it appears that the crest may have settled between 90mm and 130mm as a result of the prolonged drawdown. New monitoring points were installed upon completion of the works and these are now being levelled at monthly intervals to check that all movement has ceased.