
NORTH PENNINES ARCHAEOLOGY LTD

Client Report No. CP/188/05

**REPORT ON
ARCHAEOLOGICAL
INVESTIGATIONS
ALONG LORD CARLISLE'S
RAILWAY, MIDGEHOLME
TO TINDALE SECTION,
CUMBRIA**

**NGR: NY 6177 5930
to NY 6428 5869**

**FOR
SUSTRANS NORTH**

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EXECUTIVE SUMMARY

North Pennines Archaeology Ltd was commissioned by Sustrans North, to provide a desk-based assessment, archaeological landscape survey and watching brief on the line of a cycleway being constructed along the route of the former Lord Carlisle's Railway between Midgeholme and Tindale, an area covering almost three kilometres in length. It was deemed that the scheme would impact upon the relict industrial landscape through which the cyclepath would pass, thus necessitating the need for archaeological mitigation.

The site is located within the North Pennines Area of Outstanding Natural Beauty, a member of the European Geoparks Scheme. The site is also part of the Countryside Agency's North Pennines Landscape Character Area.

Previous archaeological and historical work within the area has identified numerous remains or sites relating to extensive industrial use, particularly mineral extraction as well as associated structures including the social provision for workers. Most notably the line of the cyclepath follows the former route of Lord Carlisle's Railway, an early wagon and railway system known for its pioneering use of iron rails as well as being a route upon which Stephenson's Rocket once operated.

The desk-based assessment collated information from previous studies while the landscape survey and watching brief collected further information from the study area to reveal a picture of the industrial past of the area.

ACKNOWLEDGEMENTS

Thanks are due to Brun Dawson of Sustrans North for help and assistance during the compilation of this report and during fieldwork.

The watching brief was maintained by Philip Jefferson BA, MA, PIFA, Patricia Crompton BSc and Dave Reay NPA Archaeologists. The walkover survey was undertaken by Frank Giecco BA, Dip Arch, AIFA. The desk-based assessment was compiled by Philip Jefferson.

The report was written by Phil Jefferson BA MA PIFA, and edited by Juliet Reeves BA. The project was managed by Frank Giecco. Overall responsibility for the project rested with Frank Giecco, NPA Principal Archaeologist and Technical Director.

1 INTRODUCTION

- 1.1 North Pennines Archaeology Ltd was commissioned by Sustrans North, to provide a desk-based assessment, archaeological landscape survey and watching brief on the line of a cycleway being constructed along the route of the former Lord Carlisle's Railway between Midgeholme and Tindale, an area covering almost three kilometres in length.
- 1.2 The work was requested as the route of the cycleway passed through a relict industrial landscape along a former railway line that serviced those industries. Therefore it was deemed that the scheme would impact upon the archaeological resource and an archaeological condition was placed upon the work to examine the archaeological record.
- 1.3 The proposed archaeological work was designed to produce a detailed record of all archaeological features along the route prior to and during construction of the proposed cycleway. This was achieved through a combination of a desk-based assessment studying existing sources for the area, a walkover landscape survey and photographic survey, and a continuous-presence watching brief during the initial ground works and site preparation in order to record any archaeological deposits which were revealed.
- 1.4 The site is located within the North Pennines Area of Outstanding Natural Beauty, a member of the European Geoparks Scheme. The site is also part of the Countryside Agency's North Pennines Landscape Character Area. It is characterised by an industrial landscape comprising the remains and scars of mineral extraction, including mine structures, spoil heaps, lime kilns and tram routes as well as quarries, shafts, adits and drift openings (Newman, 2005).

2 ARCHAEOLOGICAL BACKGROUND

- 2.1 Although the route of the cyclepath now passes through a largely rural and agricultural landscape the area contains a large amount of remains both visible and buried relating to extensive industrial activity. The cyclepath itself follows the route of a railway trackbed that was constructed to serve these industries. A number of existing buildings, now residential have foundations within this industrial past both as industrial structures and as dwellings and services for the workforce employed by the various industries.
- 2.2 The area has already been subject to numerous studies regarding the industrial use of the landscape. These have been utilised to form a more detailed background to the archaeology within the results of this document.

3 METHODOLOGY

3.1 PROJECT DESIGN

- 3.1.1 A project design was prepared in response to a brief for Archaeological Landscape Survey produced by the Cumbria County Council Historic Environment Service (Newman, 2005). This included a detailed specification of works to be carried out, consisting of a desk-based assessment, walkover landscape survey and photographic survey, and the monitoring of any intrusive

groundworks on the development. This was to be followed by a programme of post excavation and reporting.

3.1.2 The primary purpose of the survey highlighted within the project design was to enhance the archaeological record of an important industrial landscape. The archaeological survey had a number of specific aims

- to establish sufficient information regarding the location, extent, character, period, condition, fragility and potential of the surviving archaeological features;
- to provide an accurate identification survey of all archaeological features, suitable for direct inclusion in the Cumbria Historic Environment Record;
- to provide a grading of all recorded sites and features according to relative significance;
- to record any features exposed during the construction of the cycleway during an archaeological watching brief.

2.1.2 The following programme was designed to provide an accurate archaeological survey of the principal survey area, set within its broader landscape context. It is important that the group value of archaeological sites is recognised in terms of historic landscape character.

3.2 DESK-BASED ASSESSMENT

3.2.1 The desk-based assessment involved the consultation of the County Historic Environment Record in Kendal and also the County Records Office, Carlisle. This included the assessment of all readily available primary and secondary documentary and cartographic material and all available aerial photographs. This is in order to achieve a full understanding of the nature of the existing resource regarding the geographical, topographical, archaeological and historical context of the site.

3.2.2 Use of the internet was also made, with electronic enquiries of the National Monuments Record and specialist websites.

3.2.3 The Desk Based Assessment will be undertaken in accordance with the Institute of Field Archaeologists *Standards and Guidance for Archaeological Desk Based Assessments* (IFA 1994).

3.3 LANDSCAPE SURVEY

3.3.1 The landscape survey (see drawing 1) involved a close spaced walkover of the survey area noting all surface features of potential archaeological interest, mapped at a scale of 1:2000. This was combined with previous landscape work done by NPA along the corridor.

3.3.2 Each site was classified according to the Royal Commission for Historic Monuments of England (RCHME) standard conventions.

3.3.3 In addition to the mapping of all features of potential archaeological interest, a photographic record was made. General landscape photographs were taken with a

digital camera. Individual features were also photographed in colour print and colour transparency format, using a Single Lens Reflex (SLR) 35mm camera.

3.4 WATCHING BRIEF

3.4.1 The watching brief consisted of a programme of archaeological monitoring of route construction during all phases of intrusive groundworks where construction lead to the exposure of archaeological deposits such as sleepers, track fittings or significant exposures of track bed. Sufficient resource was given to the watching archaeologist to record any archaeological features revealed during construction.

3.4.2 The aims and principal methodology were based upon the requirements of the brief for archaeological work in addition to current industry best practice, they can be summarised as follows:

- to determine the presence/absence, nature, extent and state of preservation of archaeological remains;
- to examine and record intact archaeological remains uncovered during the project through the production of a written and drawn record;
- to produce a photographic record of all contexts using colour digital, 35mm colour print and colour transparency formats as applicable;
- to recover artefactual material, especially that useful for dating purposes;
- to prepare a site archive in accordance with MAP2 standards (English Heritage, 1991).

3.5 PROJECT ARCHIVE

3.5.1 The full archive has been produced to a professional standard in accordance with the current English Heritage guidelines set out in the *Management of Archaeological Projects* (English Heritage, 2nd Ed. 1991). The archive will be deposited within an appropriate repository and a copy of the report given to the County Sites and Monuments Record, where viewing will be available on request. The archive can be accessed under the unique project identifier NPA 05 HAL-B. The archive will be produced as a printed archive and digitally. Digital survey data will be provided in a *.dxf* file format for easy inclusion into a variety of environments including AutoCAD and MapInfo.

3.5.2 The findings of the assessment may be published in summary form in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society* and in digital format via the OASIS project (Online Access to the Index of Archaeological Investigations) <http://ads.ahds.ac.uk/project/oasis/>.

4 EXISTING CONDITIONS

4.1 TOPOGRAPHY AND GEOLOGY OF THE STUDY AREA

- 4.1.1 The site runs from approximately Ordnance Survey National Grid Reference (NGR) NY 6177 5930 (Tindale) to NY 6428 5869 (High Midgeholme). The route skirts around the north facing steep slope of part of the Tindale Fells. The trackbed is relatively level over the whole distance, but slight deviations along the cyclepath route mean that the height varies between approximately 220 and 230 metres above Ordnance Datum.
- 4.1.2 The solid geology along the line of the cyclepath comprises Westphalian Coal Measures (British Geological Survey) formed primarily of Carboniferous mudstones with intercalated sandstones and thin bands of limestone and coal seams (Newman, 2005). The coal measures are also bisected in places by basalt dolerite, camptonite and other allied material, and surrounded by Namurian millstone grit (British Geological Survey). The overlying drift deposits consist of boulder clay and morainic drift (British Geological Survey).

4.2 LAND USE

- 4.2.1 The trackbed itself varied in surface condition from gravel and earth surfaced tracks through to lightly grazed grassland, rushes and small shrubs. In numerous places the ground was waterlogged and marshy as water run off from the fellside pooled on the slight terrace formed by the trackbed.
- 4.2.2 The track runs through an area largely used as rough pasture for the grazing of sheep with fields defined by a mixture of low fences and dry stone walls. Amongst the fields are a number of small residential dwellings and farms with associated gardens and paddocks. Part of the route lies within a RSPB reserve.

5 RESULTS

5.1 INTRODUCTION AND ARCHAEOLOGICAL BACKGROUND

- 5.1.1 The fieldwork was undertaken over a period of 32 days between 28th February and 1st June 2005. During this time the walkover and photographic surveys were undertaken and all intrusive groundwork involved with the development was observed as part of the watching brief.
- 5.1.2 Due to the length of the survey area it has been broken down into eleven separate areas for ease of discussion in the results. The results from each area combine the information from the desk-based assessment, walkover survey and watching brief.
- 5.1.3 The archaeological remains within the survey area reflect the extraction of resources such as coal for distribution both locally and regionally. However the mines themselves are only represent part of the story of industrialisation of the area. Due to the difficulty of transporting the extracted materials by road new types of supporting infrastructure were necessary. Early solutions included the constructions of wooden wagonways or railways, a technique pioneered in Newcastle in the early 17th century (Clark, 1999; 285) and it is along one such railway that the cyclepath is constructed.

- 5.1.4 Although the remains of the transport route, mines and industrial activities dominate the visible archaeological record within the survey area the past activities also left marks within the social and agricultural landscapes with new communities growing up around the industrial centres as the existing agricultural communities could not provide an adequate workforce (Ibid, 1999; 285).
- 5.1.5 Lord Carlisle's Railway, sometimes known as the Brampton Railway, has its origins in the development of the east Cumberland coalfields on the Naworth estates belonging to George Howard, 9th Earl of Carlisle. During the 16th and 17th centuries limited extraction of the coal reserves had been undertaken from shallow drifts cut into the hillsides of the surrounding fells wherever they outcropped (NPHT, 1999; 4).
- 5.1.6 Development of this transport infrastructure began in the late 18th century on Tindale Fell with the use of wooden waggonways, firstly in the mines themselves and latter above ground. By 1799 a wooden waggonway had been laid from Lord Carlisle's mines on Tindale Fell to the coal staithes at Brampton. Rapid development of this form of transport ensured that the wooden rails were rapidly replaced by 3ft lengths of cast iron rail laid on stone blocks, and by 1808 these were being replaced by wrought (or malleable) iron. Indeed, the early use of this type of rail by the Naworth Colliery provided an example from which such eminent people as George Stephenson were to come and observe its performance. This paved the way for a wider adoption of this type of rail and established the reputation of the colliery for pioneering enterprise (*ibid*).
- 5.1.7 To James Thompson (1794 - 1851), Lord Carlisle's colliery agent from 1819 and lessee of the Naworth Collieries from 1838, belongs much of the credit for the development of Lord Carlisle's Railway and collieries. A close friend of George Stephenson's he advocated and enabled the early adoption of steam locomotion on the line commencing in 1836 at the opening of the "new railway" to Brampton, replacing the older wooden waggonway, under steam traction with borrowed locomotives. This continued in 1837 with the purchase of the famous locomotive "Rocket" built by Stephenson for the Rainhill Trials of 1829. He was also instrumental in ensuring the adoption of a universal railway gauge of 4ft 8½", insisting that the Newcastle and Carlisle Railway, the first railway to cross England, should follow this advice to ensure that railway stock from the numerous railway companies developing at that time could be used on all the lines (*ibid*).
- 5.1.8 Development of the Kirkhouse workshops was one of Thompson's stated aims on acquiring the lease of the Naworth Collieries. By 1850 the workshops had become in essence a small industrial hamlet with workshops, smith's shops, joiner's shops, coke ovens and a gas works, and was producing its own locomotives (*ibid*). As lessee he also took on responsibility for over 1,000 acres of land, no fewer than 182 cottages (Harris, 1974; 127) and several limestone quarries.
- 5.1.9 Thompson was also responsible for altering the social and agricultural landscape by the construction of more workers cottages as well as the provision of small plots of land for each worker for the grazing of stock to supplement their food

supplies or income (Harris, 1974; 118). The manure from the stock kept by the workers was also used on hay and grass land elsewhere in the area (Harris, 1974; 127-8), the provision of such agricultural land helped reduce the costs for bringing in sources of fodder to meet the requirements of the working horses at the collieries (Harris, 1974: 122).

- 5.1.10 In 1845 a zinc spelter works was built at Tindale Fell on land leased from Lord Carlisle by J. H. Attwood. Over a fifty-year period the works produced metallic zinc from ores mined in the Alston district and imported from Europe. The village of Tindale or Doleshole as it is sometimes called developed from the zinc industry into a self-contained community with a Co-operative store served by the railway, a school, Wesleyan Church and reading room. Living conditions for the spelter workers were roundly condemned by Lord Carlisle and his wife Rosalind, social reformers of their time, and was one of the reasons along with the polluting nature of the industry, given for not renewing the lease in 1895. Two attempts were undertaken to revive the industry in the 1930's that came to nought leaving vast deposits of zinc residues, some of which were removed in the 1950's to the Government's Spadeadam rocket-testing area, 15kms to the north (NPHT, 1999; 4-5).
- 5.1.11 Development of the railway, coalfields and quarries continued under the Thompson family control until 1908 and the Roachburn Pit disaster in which three people lost their lives. Following the death of Rosalind, Dowager Countess of Carlisle, the estates passed to members of the countess's family who administered them through a company called M. R. H. Minerals Ltd. Strenuous efforts were made to revive the flagging industrial operations and increased activity was apparent during the 1920's at Mint Hill drifts, Gairs and Venture drifts, the new very productive East, West, North and Banner drifts at Midgeholme and the Whinstone quarry at Midgeholme. However a gradual decline set in and by the early 1940's the outlook was not good (NPHT, 1999; 5).
- 5.1.12 Not even the formation of the National Coal Board in 1945 and its subsequent acquisition of the leases for the Naworth coalfield could save the industry. Fresh investment and modernisation in the former very productive King Pit produced initially encouraging results that were however, short-lived. In 1953 the NCB gave up their leases and dismantling of the railway was undertaken thus ending a 155-year history of one of the oldest railways in the country (*ibid*).

5.2 AREA A

- 5.2.1 This area covers the first leg of the cyclepath from High Midgeholme at the eastern end of the section (see drawing 2B and 3). Within this area there are standing remains, extant structures and earthworks existing. The structures are the remains of parts of the Midgeholme Colliery (SMR Number 10449), specifically King Pit. Of this a number of red brick pit head buildings and foundations of engine beds and capped shafts can still be seen although their condition is now somewhat deteriorated. A large amount of earthworks are also present around the surviving structure including spoil tips of colliery waste. Such earthworks potentially cover or obscure other structures relating to the workings.

- 5.2.2 Midgeholme was one of the most productive shaft pits in the Naworth colliery, it opened in 1827 once the construction of the new extension of the railway was started (Webb and Gordon, 1978; 36), and continued in production until 1893 when it was closed along with its thirty coke ovens. There are references to coke ovens or coke production at the Midgeholme Colliery as far back as 1755/6 (Harris, 1973; 359). The pit is recorded to have produced 2,930,182 tons of coal between May 1838 and May 1888. The pit was reopened by the NCB in 1949, with the site being cleared and the old shaft unsealed and relined and new pithead buildings constructed ready for working to begin in 1951, however it was closed only four years later in 1955.
- 5.2.3 The pit always suffered from excess water that required pumping at the rate of 1500 gallons a minute during the four years of operation by the NCB and this was one of the reasons quoted for its subsequent closure. The railway, which had been lifted in 1939 following the switch to road transport by the Naworth Limestone Company, was never replaced thus ensuring that all the production from the pit was taken by road.
- 5.2.4 Lying just to the north of King Pit is a row of cottages (Gazetteer Number NPA A1) dating from the early 19th century (see drawing 3). Although they are currently occupied and have seen a degree of both structural and cosmetic changes they are still good examples of workers cottages associated with the neighbouring mine, and it is still possible to see the layout of the kitchen gardens or stock paddock and pig sty's. This grouping of buildings is typical of the social provision for the industrial workforce within the region during this period.
- 5.2.5 The remains of the railway line in this area was used as an access route for the RSPB nature reserve and some residential properties. During the course of the watching brief the surface of this track was stripped and graded and an existing silted up drainage ditch along the south side of the track was re-dug. Within this area no significant archaeological features were observed or artefactual material recovered. The excavation of the track, and in particular the ditch allowed the gravel bedding of the rail line to be examined in greater detail, and it was seen that a number of successive dumps of material had been laid down, possibly to due to repairs or alterations of the line in this area.

5.3 AREA B

- 5.3.1 A number of remains, in a ruinous condition, exist within this area (see drawing 4). These relate to at least two main phases of use. The earliest phase relates to the sinking of King Pit in 1827 discussed previously when a number of coke ovens (Gazetteer Number NPA B1) were constructed. These were demolished by 1910 leaving very little remains on the surface particularly as the later phase of use by the Tindale Granite Company (NPA B2) saw further structures and alterations added on their former site, particularly the construction of a tarmacadam plant.
- 5.3.2 Joseph Heatherington of Gilsland formed the Tindale Granite Company in 1925 to work deposits of Whinstone on the nearby fells. At this time the railway was extended from its terminus at Whites Cut, the rails having been lifted from this

section after 1913, to serve the quarry traffic with the trackside structures being used for the processing of material prior to transportation to Brampton for transfer to the L.N.E.R.

- 5.3.3 The majority of the standing structures were demolished during the 1950's leaving only foundations, retaining walls and concrete bases. Amongst these remaining structures there were also a number of earthworks present including some well defined terraces lying on the north side of the track with small lengths of retaining wall visible and a number of oval depressions, particularly on the lower terrace.
- 5.3.4 On the south side of the track amongst a number of substantial stone and concrete structures the steep slope has a series of now grassed over dumps of demolition material, probably relating to the final clearance of the site during the 1950's. During the stripping of the trackbed for the cyclepath and the extension of the drainage ditch on its north side these deposits were also observed. The same build up of gravel bedding for the rail line seen in Area A was also observed within this area.
- 5.3.5 No features or artefacts of archaeological significance were observed within Area B during the watching brief during the excavation of the cyclepath and ditches.

5.4 AREA C

- 5.4.1 The Tindale Granite Company also had trackside structures within Area C (see drawing 4), most notably a crushing plant that was installed in 1926. The location of this was within a siding on the south side of the main track that still has a substantial retaining wall *in situ*. This replaced a washery (NPA C2), which, as with the nearby coke ovens, was part of the subsidiary structures from the Midgeholme Colliery further to the east.
- 5.4.2 The washery is not present on the Ordnance Survey 1st edition map of 1863 (see drawing 4), but does appear on the 2nd edition of 1900. The location of this structure corresponds to some structural remains uncovered during the watching brief. In the area of the siding a much broader area was stripped to provide space for parking for the neighbouring houses as well as the construction of a new drainage ditch to prevent flooding, which the area was prone to. While excavating the ditch a number of stone and brick wall lined sunken features, possibly inspection pits or similar, were observed.
- 5.4.3 Once the surface had been cleaned it was also observed that a number of related wooden sleepers were also surviving *in situ*. Due to the poor ground conditions, and the flooded nature of the ditch, detailed work was difficult, and no dating material was recovered from these remains. This means that it is not possible to say to which phase of use they belong, or even if parts of both the washery and crushing plant are present.
- 5.4.4 On the opposite side of the trackbed lie Battery End Cottages and Rose cottage (NPA C1). These consist of two detached cottages located close to the eastern end of the Midgeholme embankment that probably date to the construction of the Midgeholme railway extension in the early 19th century. These are again typical

of the provision of workers housing with rows of single cell dwellings that have now been adapted to improve the current living accommodation.

- 5.4.5 A further two additional ruinous structures lie towards the bottom of the Midgeholme embankment close to Blackburn Beck. One comprises the remains of a three-cell single storey structure that has reused stone sleeper blocks as quoins. While the second is in even poorer condition but appears to be more substantial with a more complex layout.

5.5 AREA D

- 5.5.1 Area D is dominated by the substantial embankment constructed between 1827 to 1828 to extend the railway to Midgeholme over the broad valley of the Black Burn (see drawing 5). The structure is largely intact, stabilised in places by relatively dense shrubs and undergrowth, however some erosion is occurring around the culverted beck and where water run of occurs on its eastern end.

- 5.5.2 The stripping of the cyclepath across the top of the embankment again revealed the gravel bedding deposits with some marks indicating the location of removed sleepers. A partial fragment of a wooden sleeper and a piece of broken track were also observed within the topsoil covering the gravel, these are likely to be related to the dismantling of the last phase of use during the 1950's.

5.6 AREA E

- 5.6.1 Within this small area (see drawing 6) the cyclepath route diverts from the route of the trackbed to the south into an area of open rough pasture crossing over a small stone culvert built within a drainage ditch to allow access to the grazing land. Once the route diverted the gravel bedding deposits disappeared and only a thin layer of topsoil was present directly over the undisturbed natural clays. No archaeological features were observed within this area.

5.7 AREA F

- 5.7.1 There has been mining activity at Whites Cut (NPA F1) since 1835, although evidence of this early mining has mostly been removed by later activity, however some remains from this later working does still exist (see drawing 6). The Naworth Coal Co. reopened the mine here as a shaft and a drift in 1913 which operated until 1924, at which time winding gear and screens were sold for scrap. New sidings to access the screens were also laid out in this period.

- 5.7.2 After 1913 the tracks east of Whites Cut as far as Halton Lea Gate were removed but were then re-instated in 1930 to serve the Tindale Granite Company to the east of the embankment over Black Burn. In 1933 the Naworth Collieries Company, successors to the old Naworth Coal Company, built a new loading dock on the site of the old Whites Cut mine. The remains of this substantial loading dock are still present adjacent to the route of the cyclepath and show signs of numerous repairs and alterations along its length. The loading dock was used to receive coals by road from West, East, North and Banners drifts located just across the road to the north adjacent to Blackburn Beck.

- 5.7.3 In 1947 the National Coal Board took over the mining operations of the Naworth Collieries Company. At that time they attempted a small drift to the east of the former workings however it proved unproductive. Whites Cut continued to be used as a loading point for coal from various sources until 1953 when the NCB decided to cease all operations on the Naworth coalfield. This led to the dismantling of the track and associated structures.
- 5.7.4 The watching brief found no further evidence for any structures associated with Whites Cut workings due to it following the trackbed at this point, instead further gravel bedding was observed.

5.8 AREA G

- 5.8.1 Running west from Whites Cut is an approximately four hundred metre long cutting for the railway trackbed (see drawing 7). At the time of the survey work this was subject to severe waterlogging as any drainage had been blocked in the past leaving the line of the track as marsh. The route of the cyclepath however deviated to the north of the trackbed along the top of the cutting itself. Along this route only small dumps and banks of material connected with the excavation of the cutting and material associated with the resurfacing of the adjacent road were observed.
- 5.8.2 At the western end of the cutting lies the site of the former Prior Dyke Drifts (NPA G1) and associated features. The earliest workings date to the early 18th century that were later reopened between 1845 and 1849 to supply poor quality coal for either lime burning or the Tindale Spelter works. The Naworth Coal Company again reopened it for a year between 1923 and 1924.
- 5.8.3 Two years after the Naworth Coal Company terminated their lease a consortium of three local families set up the Naworth Collieries Company Ltd. Their first colliery was the Mint Hill drift, located close to the Brampton to Alston road on the north side of Haining Burn almost opposite the Prior Dyke workings. Coal was conveyed from Mint Hill drift by a narrow gauge rope-worked tramway across Haining Burn and under the road before passing through some of the Prior Dyke workings onto the colliery track at Prior Dyke sidings. The line of the tramway and some of the other structures are still visible as earthworks to the north of the cyclepath route. Mint Hill closed in 1930.
- 5.8.4 Where the route of the cyclepath descends from the top of the cutting back onto the trackbed the remains of a curvilinear retaining wall was observed. As with the rest of the trackbed within this area there was a large amount of surface and ground water that necessitated the excavation of new drainage ditches and the construction of a new culvert under the cyclepath. The conditions made observation difficult however no significant archaeological remains were observed within the gravel bedding deposits. The line of a large copper electricity cable was noted during the excavation and a handle from a set of points was recovered.

5.9 AREA H

- 5.9.1 Part of the Prior Dyke drifts' workings was Prior High Side drift (NPA H1) which lies approximately 150 metres to the west of the remains observed in Area G (see drawing 8). The surviving remnants are in a better state of preservation in this area with the remains of small loading dock, engine beds, mine entrance and spoil heaps all present close to the southern edge of the trackbed. Prior High Side drift was opened in 1931 but was only worked for just over one year.
- 5.9.2 The excavation and stripping of the cyclepath in this area was wider than elsewhere due to the need for constructing a new fence line for control of stock, however despite the increased size of the area examined and the proximity of existing industrial structures there were no significant archaeological deposits observed. The marks where sleepers once lay were present in several locations and close to the entrance to the drift there were small dumps of clay and stone, the majority of the deposits observed consisted of the fine gravel bedding seen elsewhere.
- 5.9.3 Just to the west of Prior High Side drift the trackbed was severely waterlogged necessitating the excavation of new drainage ditches either side of the trackbed. On both sides the natural clays were reached rapidly, however on the north side a substantial stone built culvert was also uncovered.

5.10 AREA I

- 5.10.1 This area of trackbed lies between Prior High Side drift and a large breach in the rail line (see drawing 9a). The track lies on a small artificial terrace part way up a steeply sloping section of fellside. In this area there are no trackside structures present, and the excavation of the cyclepath route uncovered no archaeological remains except for the gravel bedding and two small dumps of lime.

5.11 AREA J

- 5.11.1 This area lies at the eastern end of the Tindale embankment (NPA K4), also known as the "Great Battery", at a point where a significant breach over a former culvert has required the construction of a new bridge to serve the cyclepath (see drawing 9a). The breach itself has suffered from steady erosion on either side and the exposed collapsed stonework of the former culvert can be seen littering the streambed below.
- 5.11.2 The watching brief did not find any archaeological material except the gravel bedding for the tracks, although during excavation the cyclepath did pass through an area of trackside building remains and earthworks (see drawing 9b). On the north side of the trackbed lie two ruinous buildings. Mostly now turfed over and existing as earthworks however it is possible to see some of the layout of the structures. There is undoubtedly greater depth of material surviving *in situ* underneath the collapsed rubble and topsoil.
- 5.11.3 Both structures are visible on the 1st edition Ordnance Survey map of 1863, and shown in even greater detail on the 1900 2nd edition map (see drawing 9a), possibly showing evidence of alterations. The westernmost structure, situated

slightly below the level of the trackbed can be seen from the cartographic evidence as being associated with some small enclosed areas, the boundary of one possibly still visible as a slight scarp slope running along the edge of the trackbed.

- 5.11.4 On the opposite side of the track two further structures stand. The first, a square single-celled building is derelict but still has its roof. It stands on the eastern end of a broad levelled area standing slightly higher than the current surface of the trackbed. It appears to have been present on the 1863 map. The second structure is in much poorer condition with the walls only coming up to around half their original height. This structure is also a square single-celled building and sits upon a two-metre terrace with a trackway sloping down to the trackbed to the north. It is not apparently present in 1863, however it is marked on the later 1900 map.
- 5.11.5 It is not clear from surface observation or the cartographic evidence what the function of these structures was, or even whether they are associated with the spelter works to the west or Riggfoot drift to the north.

5.12 AREA K

- 5.12.1 This area is possibly the most complex of all those on the Midgeholme to Tindale section of Lord Carlisle's Railway (see drawing 10a). The area is dominated by substantial quarrying and spoil tipping as well as remains of extensive industrial activity. However there is also an amount of evidence for the social provision for the workforce. The earliest example of community development in this area is the prominent earthwork remains of Doleshole cottages, Post Office and School (NPA K1). This is the former site of a row of terraced cottages, probably for spelter workers or quarrymen, as well as a post office and school.
- 5.12.2 Close by lies a small bridge over Tarn Beck (NPA K2) where iron rails from the colliery railway have been set into the structure. Although this is of little intrinsic architectural or historic interest the rails serve as a reminder of the industrial and railway past of the area.
- 5.12.3 The community developed around the spelter workings shifted from Doleshole cottages to the north of the track into the tiny settlement of Tindale (NPA K3). By 1859 a schoolhouse had been established with the inclusion of a teachers residence as well as further housing for spelter workers. By 1885 the Tindale Co-operative Society was operating within the village and in 1888 a Wesleyan Chapel, reading room and further terraced dwellings had been added. Many of these structures still stand and are a good example of the social provision for the community of industrial workers.
- 5.12.4 Running for a distance of approximately 300 metres eastwards from Tindale is the Tindale Embankment (NPA K4), called by James Thompson, the man who organised its construction, as the "Great Battery", an operation started in 1827 with the first wagons moving along the extended line by August 1828 (Webb and Gordon, 1978; 35). The route of the cyclepath follows the pot-holed surface of the embankment, however no watching-brief was needed in this area after it was

decided to lay stone directly on the existing surface. The embankment itself relates to the expansion of the railway into the developing coalfields and industries to the east across the Tarn Beck valley such as the spelter works, Bishopshill Quarries and the Henry mines above Bishopshill. The first steam engine to be used on this new route was the well-known Rocket, ten years after it was opened.

- 5.12.5 Further workers housing were located across the Tarn Beck bridge from Doleshole cottages at Spelter Works Row or Gateshead Terrace (NPA K5). Very little remains from these structures after they were demolished during the 1960's, but they do play an integral part of the industrial history of Tindale. Originally part of the spelter workers houses built by J.C. Attwood after 1845 the conditions within these dwellings provided some of the impetus for Lord Carlisle not renewing the lease for the spelter works upon expiring in 1895. He described the buildings as "kennels" (Almond, 1978; 182) and in the draft for the new lease asked for improvement in the living conditions, something that John Cameron Swan, the leading proprietor of the Tindale Spelter Company, felt unable to agree to. The cottages consisted of a small bedroom over a kitchen, and in 1887 it was recorded that within fourteen such cottages no fewer than 93 people actually lived (Harris, 1974; 140).
- 5.12.6 Perhaps the most significant remains within the area relate to the history of zinc smelting on the site. On the south side of the large quarry lies the sites of the former Tindale Spelter Works (1845 – 95) and Tindale Zinc Extraction Ltd (1928 – 31) (SMR No. 10451). The original zinc works date from 1845 when J C Attwood leased a piece of land on which to build a zinc smelter, from the Naworth estates belonging to George Howard, 9th Earl of Carlisle. Attwood chose the site due to the proximity of actively worked coal deposits, mines that produced zinc minerals as well as access to an existing railway system allowing transport of materials to and from the site (Almond, 1978; 177).
- 5.12.7 The remains of this 19th century production are poor due to its demolition prior to the construction of the later fuming works, leaving only small amounts of visible foundations and structures on the surface. However it is likely that significant subsurface remains are still *in situ*.
- 5.12.8 Apart from the poor housing conditions already mentioned a further issue Lord Carlisle had with the renewal of the lease in 1895 was the significant pollution from sulphurous fumes that the countryside around the site was being spoilt for agriculture. As no agreement could be met on changing working practice and social provision the lease was not renewed and the plant closed. This site is historically important due to it being the only zinc smelter to operate in the north of England.
- 5.12.9 The site was later taken over by the Tindale Zinc Extraction Ltd., who constructed a rotary fuming kiln between 1928 and 1929, the remains of which along with associated ancillary structures can still be observed today. This operated from 1930 to re-process the refuse heaps left over from the earlier activities. It was hoped to extract zinc oxide of pigment grade using a process developed by the German firm of Krupp known as the Waelz process.

Unfortunately due to contamination this process was not a success and in little over a year the plant was abandoned.

- 5.12.10 During 1937 the plant was again in use by the National Smelting Company of Avonmouth, to try and extract cadmium from 'sinter rappings' accumulated at smelters in south-western England. A catastrophic failure of the kiln lining meant the operation only lasted for 87 days, at which point the operation closed and the plant demolished with usable parts being removed of site for use elsewhere. The site is of historical importance as it contains the only surviving remains of a fume works in Britain.

6 THE FINDS

- 6.1 During the course of the watching brief a number of artefacts were recovered. All of these came either as surface finds or were within the thin layer of topsoil removed during the stripping. No finds were recovered *in situ*. Due to most of the finds being un-stratified or relating to the demolition of the final phase of the railways use their presence was noted but not retained. Those finds considered to be of intrinsic interest were retained and are discussed below. Other artefacts relating to the railway were also observed being re-used elsewhere such as stone sleepers as lintels in nearby properties.
- 6.2 The majority of the retained finds were all connected with the earlier use of the railway. This earlier phase is particularly relevant for rail tracks and fittings as Tindale became famous as the scene for experiments in the use of wrought-iron rails in 1808 (Harris, 1972; 227). Despite the experiments being undertaken, the wooden rails of the original waggonway were being replaced around the same period by cast iron rails (ibid, 1972; 241). The style of rail, track fittings and gauge also altered over time, and although they are not necessarily changed at the same time across a whole region, or even an individual line, the style can sometimes aid with the dating of the artefact.
- 6.3 Seven artefacts were retained during the watching brief. The most interesting being a fish bellied T-section malleable iron rail (SF 1) measuring 1.7m in length and a section of wrought iron crossing sheeve (SF 2) measuring 0.75m in length. The fish bellied rail although not appearing to resemble the published types relating to the earliest rails, does appear to date from the first half of the 19th century. The point lever (SF 6) is of a type that continued in use from the late 19th century well into the 20th century as were two sections of iron rail (SF 3 and 4) and a chair (SF 5). A large split pin (SF 7) measuring 0.40m in length was also retained.

7 CONCLUSIONS

- 7.1 The history of Lord Carlisle's Railway and the industrial past of this area have been studied in numerous articles and particularly in Webb and Gordon (1978). The results of the fieldwork and desk-based assessment has allowed one short stretch of the railway line to be studied in greater detail, and allowed the

condition of the remains and the potential for sub-surface archaeology to be observed.

- 7.2 The route of the cyclepath runs now through largely upland pasture and small enclosed fields, however the visible remains serve as a reminder of how this area was once industrially active. This change in landscape use and the activities once practised in the area may be of interest to members of the public who will use the cyclepath in the future. Those areas examined during the survey could be described through information boards of trail leaflets that may be produced, allowing the users of the trail to explore how the landscape was shaped.
- 7.3 During the course of the fieldwork the condition of some remains were observed as being poor due to erosion or exposure to the elements. The long-term protection of such remains should be a consideration for the future particularly when considering that sites such as the Tindale Spelter works and the Tindale Zinc Extraction site can be considered as nationally important due to their rarity and survival. Consideration of any protective measures could also be expanded beyond individual sites due to the close relationship with all the industrial activities along Lord Carlisle's Railway.
- 7.4 The survival on the various sites, along with the potential for buried remains, could allow for more detailed archaeological work as part of any future research. The number of sites within such a small area, in addition to the none industrial landscape around, form an interesting landscape to study the growth of industry in the past as well as the social aspects of changing communities and provision for the workforce and the existing agricultural population.
- 7.5 The results of this work, in addition to any other archaeological work undertaken on the Lord Carlisle's Railway, should allow for greater understanding of the history and complexity of the archaeological resource in the area, and form a basis for any future management decisions regarding research or conservation of the sites.

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9 APPENDICES

9.1 APPENDIX 1: SMR SITES WITHIN SURVEY AREA

SMR No.	Site Name	Site components from Gazetteer	OS NGR	Site Type	Period/Date
10449	Midge Holme	King Pit (Midgeholme colliery)	364340 558650	Colliery	Unknown
10451	Tindale	Tindale Spelter Works 1845-95 Tindale Zinc Extraction Ltd 1928-31	361850 559210	Tin Works	Post-medieval
11228	Brampton Junction to Alston Line		360000 559660	Railway	Post-medieval

9.2 APPENDIX 2: GAZETTEER OF SITES WITHIN SURVEY AREA

Introduction

The site gazetteer examines in detail SMR sites and other noticeable archaeological features within the immediate surrounds of the cyclepath corridor effected by the development where there is an intrinsic interest for the users of the cyclepath. This gazetteer is an updated version of work carried out previously on Lord Carlisle's Railway (NPHT, 1999).

The gazetteer is structured as follows:

SMR Number: Where relevant Sites and Monuments Record number for the site. If the site is not within the SMR a unique identifying number has been given that was used throughout the report.

Site Name: Site name as given within the SMR or if no name is known taken from the most appropriate or nearest cartographic reference.

Location: defined by an eight figure Ordnance Survey NGR.

Condition: an assessment of the extent to which the component survives in relation to its original form and the potential it offers in terms of surviving archaeology.

Protected status: a statement about its current or potential protected status including listing, scheduling or ranking as part of the Monuments Protection Programme.

Use: a statement regarding its present day usage.

Historic interest: a description of the sites historical background, describing if possible its date of inception, its function, its relationship to other components or processes and its date of redundancy if applicable. A statement of its significance on a local, regional, national or international scale as appropriate.

In some cases a conditional value has been assigned to appraise the site in a manner that can allow easy comparisons to be made between sites. The conditional values apply to the following forms of assessment and are derived from those used by English Heritage in their MPP Monument Evaluation Manual for single monuments.

Gazetteer

Site name: Doleshole cottages, Post Office and School

Site number: NPA K1

Location: NGR NY61655930

Condition: Poor, survives only as earthwork. Archaeological potential is high as earthworks are prominent and extensive

Protected status: Nil at present, may be incorporated into possible scheduling of spelter works remains.

Use: Sheep grazing

Historic interest: Site of former terraced row of cottages probably occupied by spelter workers or quarrymen, Post Office and School. Shown on the 1st edition 25" O. S. map of 1863 ((see drawing 10a) they represent the earliest development of the Tindale community on the south side of the colliery railway in association with the spelter works and probably date from 1859. These buildings pre-date the later developments on the north side of the track bed that included the Tindale Co-operative Society, Wesleyan Methodist Church, reading room and additional terraced housing.

Site name: Tarn Beck Bridge

Site number: NPA K2

Location: NGR NY61635915

Condition: Good

Protected status: Nil at present, may be incorporated into possible scheduling of spelter works remains.

Use: Access route from Tindale village to Bishopshill

Historic interest: The bridge over Tarn Beck is of little intrinsic architectural or historic interest as a structure apart from its group value with the smelter site. However, on both sides of the bridge parapet, pairs of patent wrought iron rails from the colliery railway have been set into the ground and pinned, using iron pegs, to the masonry of the bridge. The rails are set close to the stopped ends of each side of the bridge. Although not uncommon, the rails are a visible and poignant reminder of the pioneering nature of this railway enterprise.

Site name: Tindale village

Site number: NPA K3

Location: NGR NY61855920

Condition: Good

Protected status: Nil

Use: Rural community

Historic interest: Rural village community developed around the building of a spelter works in 1845. An eastward extension of the Lord Carlisle Railway completed in 1828 passed by the tiny settlement of Tindale (sometimes called Doleshole) without generating any significant growth. Not until the building of the spelter works with its need for housing the workers, did the settlement expand appreciably. By 1859 a schoolhouse for children had been established with a residence for the teacher along with housing for the spelter workers and a post office. In 1885 the Tindale Co-operative Society was operating and in 1888 a Wesleyan Chapel, reading room and more terraced dwellings had been added. The village is a fine example of social provision in rural industrial communities firstly by need and latterly by social conviction at the behest of enlightened benefactors.

Site Name: Tindale embankment (The "Great Battery")

Site number: NPA K4

Location: NGR NY61905920

Condition: Good, minus the rails and sleepers and somewhat potholed on its running surface. The completion of the Midgeholme to Tindale section of the cyclepath will see the track on the top further protected from erosion by the laying of a compacted stone surface. Significant breach at its eastern end close to Riggfoot drift.

Protected status: Nil at present, may be incorporated into possible scheduling of spelter works remains for group value particularly in light of potential status of Lord Carlisle's railway in its own right.

Use: Derelict, access to Bishopshill

Historic Interest: Constructed in 1827 by James Thompson as part of the Midgeholme Railway extension and called by him the 'Great Battery' it forms an integral and highly visible landmark related to a major expansion of the railway eastwards to the developing coalfields. It extends eastwards for a distance of 300m from the centre of Tindale village, providing the physical link across Tarn Beck valley and allowing railway access to the spelter works, Bishopshill Quarries and the Henry mines above Bishopshill. Built ten years before Rocket, the first steam locomotive to ply this route began operating. A few pieces of stone sleeper blocks with recesses cut for the rail chair to sit in, can be seen lying around this area.

At the eastern end of the embankment where the route follows a southerly route along the line of a small beck to avoid a substantial breach in the embankment two single celled buildings can be seen. These appear on the 1st edition O. S. 25" maps but it is not certain if they relate to the spelter works or to Riggfoot Drift located close by. Similarly on the eastern side of the breach a group of building remains lying adjacent to the track bed are of uncertain origin but may be the location of the Rocket locoshed.

Site name: Spelter Works Row or Gateshead Terrace

Site number: NPA K5

Location: NGR NY61685909

Condition: Poor, buildings demolished in 1960's leaving only concrete floors and lines of foundation walls.

Protected status: Nil at present.

Use: Site being used as a stable block

Historic interest: Part of the housing provision built for the spelter workers by J C Attwood after 1845. The condition of these dwellings was one of the reasons cited by Lord Carlisle for not renewing the lease for the spelter works when it expired in 1895. Described by him as "kennels" and supported by his wife Rosalind Frances Stanley, he included improvement clauses in the draft lease that John Cameron Swan, the leading proprietor of the Tindale Spelter Company, felt unable to agree to. Harris (1974) in his survey of the Colliery Settlements of East Cumbria highlights the deplorable living conditions provided for the spelter workers by J C Attwood. The cottages each contained a ground floor kitchen measuring 4.1m x 3.6m and a bedroom above. "Fourteen cottages of this type housed in 1887 no fewer than 93 person, or an average of 6.64 inhabitants per house".

Site name: Tindale Spelter Works 1845 - 95

Site number: 10451

Location: NGR NY61805910

Condition: Poor, the site was abandoned shortly after the lease expired in 1895 and demolished prior to building a fuming plant in 1930. Some evidence of foundations survive showing through vegetation to west of the remains of the later fuming plant. The potential for surviving archaeological remains below ground is high.

Protected status: Scheduled ancient monument number 32895).

Use: Derelict

Historic interest: Zinc smelting at the Tindale site dates from 1845 when J. C. Attwood leased a piece of land on which to build a zinc smelter, from the Naworth estates belonging to George Howard, 9th Earl of Carlisle. Attwood, a member of a prominent Midlands business family has chosen a site that although seemingly remote, was close to actively worked coal deposits, mines that produced zinc minerals and had access to a railway system for the import of ores from Europe and transport of the finished product.

Smelting was undertaken in a two-stage process, firstly roasting the zinc sulphide (blende or 'Black Jack') ores in reverberatory furnaces converting them to zinc oxide. The oxide was mixed with coal fines and heated in clay retorts in a furnace of modified Belgium design to produce gaseous zinc that condensed to liquid metal in fireclay tubes attached to the retorts. Many thousands of the clay retorts would have been used during the life of the smelter and many broken remnants can be found amongst the spoil heaps. The roasting process produced large quantities of sulphurous fumes that, according to Lord Carlisle, polluted the countryside around the site, inhibiting the farming activities of the area. This was one of the main reasons quoted in 1895 when Lord Carlisle refused to renew the expiring fifty-year lease, thus prompting the closure of the site.

The site is historically important in that it was the only zinc smelter to operate in the north of England, reputedly using a patented process that was superior to that in any other country. That it did so at a time when British production of zinc increased twenty fold is a poignant reminder of the role that this smelter played in the local and national economy. The potential archaeological significance of the site cannot be underestimated, remains if they survive would probably be the only ones to exist in Britain of a 19th century zinc spelter works. A slab of metallic zinc, probably of Tindale Fell origin, is in the keeping of the Department of Geology, University of Durham.

Site name: Tindale Zinc Extraction Ltd 1928 - 31

Site number: 10451

Location: NGR NY61805910

Condition: Medium to good survival of the large concrete plinths that supported a rotary fuming kiln and ancillary flue, coal breeze bunker and pits.

Protected status: Scheduled ancient monument number 32895).

Use: Derelict

Historic interest: A rotary fuming kiln was built in 1928/29 on the site of the former Tindale Spelter Company's zinc smelter and operated from 1930 for just over a year until April or May 1931. The kiln, which was supplied by the German firm of Krupp Grusenwerk of Magdeburg, was 30m long by 2.5m in diameter. This was to be used to re-process the refuse heaps left over from the earlier activities. It was hoped to extract zinc oxide of pigment grade using a process developed by Krupp known as the Waelz process. This involved heating the zinc refuse mixed with coal breeze to high temperature in the rotary kiln then blowing the volatilised zinc component using large fans, for collection in woollen-bag filters. The process was not a success due to contamination and the plant was abandoned. In 1937 the plant was used experimentally by National Smelting Company of Avonmouth, to try and extract cadmium from 'sinter rappings' accumulated at smelters in south-western England. This operation lasted for only 87 days before catastrophic failure of the brick lining to the kiln occurred thus finally terminating all work at Tindale. The plant was dismantled and taken away for use at other sites.

The site is historically important in that it contains the only surviving remains of a fume works in Britain.

Site name: Prior Dyke Drifts

Site number: NPA G1 (Prior High Side drift NPA H1)

Location: NGR NY62755920 Prior High Side drift 1931 and NY62905925 early eighteenth century workings, later 1920's drifts and Mint Hill tramway terminus.

Condition: Medium, abandoned drift workings on elevated platforms to south with remains of small loading dock, engine beds and spoil heaps. Early workings to north of track bed and tramway terminus visible as prominent earthworks with structures showing through. Line of tramway can be traced leading through the fields to the north.

Protected status: Nil

Use: Derelict, sheep grazing

Historic interest: Early eighteenth century workings reopened from 1845 to 1849 to supply poor quality coal for lime burning or the Tindale Spelter works. Reopened for a short period in 1923-4 by the Naworth Coal Co. successors to the Thompson family as lessees of the Naworth Collieries. Following the Naworth Coal Co.'s decision to terminate their lease in 1924 a consortium of three local families who were managing the Carlisle estates as M. R. H. Minerals Ltd, set up the Naworth Collieries Company Ltd. The first new colliery opened by them in 1926, was the Mint Hill drift. Located on the north side of Haining Burn close to the Brampton to Alston road (A689) almost opposite the Prior Dyke workings. Coal was conveyed by a narrow gauge rope-worked tramway across Haining Burn and under the A689 road before passing through some of the Prior Dyke workings to emerge alongside the colliery track at Prior Dyke sidings. Mint Hill was closed in 1930. This new development injected fresh impetus into the railway that was re-laid from Whites Cut to serve the Tindale Granite Company, after being lifted in 1913. Prior Highside drift on south side of railway opened 1931 and was worked for just over one year.

Site name: Whites cut

Site number: NPA F1

Location: NGR NY63405910

Condition: Poor, most of the evidence of the former mines, screens and loading docks have been removed. All that remains are the line of the former railway and the stone retaining walls of the loading dock. This shows evidence of repairs and alterations along its face.

Protected status: Nil

Use: In private ownership and with the raised section of the former loading dock currently being used as a storage area.

Historic interest: Old workings at Whites Cut, possibly dating from 1835, were reopened as a shaft and a drift by the Naworth Coal Co. in 1913 and operated until 1924 when the newly installed winding gear and screens were sold for scrap. New sidings to access the screens were laid. After 1913 the tracks east of Whites Cut as far as Halton Lea Gate were lifted only to be re-instated in 1930 to serve the Tindale Granite Company. In 1933 the Naworth Collieries Company, successors to the old Naworth Coal Company, built a new loading dock on the site of the old Whites Cut mine. This received coals by lorry from the newly opened West, East, North and Banners drifts located just across the road to the north adjacent to Blackburn Beck. The National Coal Board who took over the operations of the Naworth Collieries Company in 1947 tried a small drift to the east of the former workings in 1947 that proved unproductive. Coal continued to be loaded on to the railway from various sources until in 1953 the NCB decides to curtail all operations on the Naworth coal field leading to the dismantling of all the track and loading docks.

Site name: Battery End Cottages and Rose cottage

Site number: NPA C1

Location: NGR NY63755870 approximately 550m west of High Midgeholme

Condition: Good, one building at the time of the fieldwork was undergoing major repairs and additions.

Protected status: Nil

Use: Domestic accommodation

Historic interest: Two detached cottages located close to the eastern end of the Midgeholme embankment and probably built in the early 19th century during the construction of the Midgeholme railway extension. Typical of housing provision for mine workers in their original form, both single storey cottages have been adapted to improve the living accommodation by converting a row of single cell dwellings into double or triple cell units. Two additional ruinous structures lie at the bottom of the valley on the north side of Midgeholme embankment close to Blackburn Beck. The first comprises a three cell single storey structure that has reused stone sleeper blocks as quoins. The second is less well preserved but of a more substantial build and complex ground plan.

Site name: Midgeholme Washery and Coke Ovens

Site number: Washery- NPA C2; Coke Ovens- NPA B1

Location: NGR NY63855965 the washer plant was located to the south of the track bed opposite Battery End Cottages, the coke ovens on the north side of the track bed east of Battery End cottages.

Condition: Poor, coke ovens demolished by 1910, washery closed in 1912 and demolished prior to 1926 when the Tindale Granite Company installed a crushing plant. Little if any identifiable remains are left on the site. Excavation of a new ditch has shown some sub-surface elements of the washery are surviving including foundations, sunken feature structures and sleepers.

Protected status: Nil

Use: Derelict, mobile homes currently being stored on Coke Ovens, and building material stored on both sites. Part of R.S.P.B. reserve access.

Historic interest: The washery and coke ovens date from a period of expansion for the Lord Carlisle's Railway and are intimately tied in with the sinking of King Pit (Midgeholme Colliery) in 1827 and the extension of the railway to Midgeholme in 1836.

Site name: Tindale Granite Company

Site number: NPA B2

Location: NGR NY63855965 on site of former washery associated with King Pit

Condition: Poor, most of the standing structures were demolished in the 1950's leaving only foundations, retaining walls and concrete bases. A single office or workshop building constructed from breeze block remains intact on the north side of the track

Protected status: Nil

Use: Derelict, mobile homes currently being stored on both sites. Part of R.S.P.B. reserve access. Former office or workshop on south side of track bed now in private ownership.

Historic interest: The Tindale Granite Company formed by Mr Joseph Heatherington of Gilsland in 1925 to work deposits of Whinstone on the fells south-west of Midgeholme operated from 1926. A large crushing plant was built on the site of the former coal washery with offices and a tarmacadam plant being built later on the site of the old coke ovens. The railway was extended at this time from its terminus at Whites Cut, the rails having been lifted from this section after 1913, especially to serve the quarry traffic. Material was transported to Brampton for transfer to the L.N.E.R.

Site name: King Pit (Midgeholme colliery)

Site number: 10449

Location: NGR NY64255865

Condition: Medium, standing remains include several red brick pithead buildings, foundations of many other associated features including engine beds, capped shafts, reservoirs and stone structures. Earthworks are numerous and probably cover the remains of early coke ovens, winding and pumping houses and culverted watercourses. These remains are located to the south and rear of the main pithead structure. Extensive levelled areas to north of pithead building remain from removal of extensive sidings associated with the colliery. A large spoil heap of colliery waste is located to the north of the former sidings.

Protected status: Nil

Use: Derelict, large open spaces of levelled ground. One of the former colliery buildings is being used as a workshop. Part of R.S.P.B. reserve access.

Historic interest: One of the most productive shaft pits in the Naworth colliery, it opened in 1827 and continued in production until 1893 when it was closed along with its thirty coke ovens. The pit produced 2,930,182 tons of coal between May 1838 and May 1888 which compares well with the figures for Blacksike pit, that other redoubtable of the Thompsons. Reopened by the NCB in 1949, the site was cleared, the old shaft unsealed and relined and new pithead buildings constructed ready for working to begin in 1951, only to close four years later in 1955. Always a wet pit it required pumping at the rate of 1500 gallons a minute during the four years of operation by the NCB and this was one of the reasons quoted for its subsequent closure. The railway, which had been lifted in 1939 following the switch to road transport by the Naworth Limestone Company, was never replaced thus ensuring that all the production from the pit was taken by road. Cumbria Sites and Monuments Record list this as (Cumbria 10449) Midgeholme Colliery.

Site name: Midgeholme Cottages

Site number: NPA A1

Location: NGR NY6430585870

Condition: Good

Protected status: Nil

Use: Domestic accommodation

Historic interest: Good example of miners cottages dating from the early 19th century and incorporating large kitchen gardens/cow plots and pig sties. The cottages are currently inhabited and have undergone some structural or cosmetic changes but their association with the remains of King Pit are still relevant.

9.3 APPENDIX 3: PLATES



Plate 1: The siding next to Rose cottage, formerly the location of the washery



Plate 2: The stripped cyclepath on the embankment west of Rose Cottage



Plate 3: Ground conditions in the cutting west of Whites Cut



Plate 4: General view along valley with earthwork remains of Prior Dyke Drifts tramway in foreground



Plate 5: View from the east of trackbed and spoil heaps of Prior High Side Drift



Plate 6: Wet conditions on the trackbed west of Prior High Side Drift



Plate 7: The formerly wet area west of Prior High Side Drift after stripping for cyclepath and excavation of new drainage ditches



Plate 8: The route of the cyclepath around the breach in the “Great Battery”



Plate 9: The breach in the “Great Battery”



Plate 10: View across the quarry and former zinc works at Tindale



Plate 11: An example of T-sectioned malleable iron rail (SF 1)
Length of iron bar above (SF 4).



Plate 12: Two Sheeves from whites cut (SF 2 and SF 3)



Plate 13: A points lever (SF 6), rail chair (SF 5) and large split pin (SF 7)

9.4 APPENDIX 4: ILLUSTRATIONS