



SHAPFELL QUARRY PIPELINE, CUMBRIA

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SUMMARY

Corus have proposed pipelines, c 4.6km in combined length, in two sections, to provide drainage from Shapfell Quarry, Cumbria. The northern section extends from the north side of Shapfell Quarry to Trainrigg Sike in the north (NGR NY 5902 1455 to NY 5798 1562) and the southern section from the north side of Shapfell Quarry to Dalebanks Beck in the south-east (NGR NY 5902 1455 to NY 6039 1361). The pipeline to Dalebanks Beck is proposed to be routed within the existing road from Shap to Oddendale, and on a track through agricultural land on the eastern side of Oddendale, to Dalebanks Beck (Fig 1). In accordance with a verbal brief from the Assistant Archaeologist, Cumbria County Council, Oxford Archaeology North (OA North) undertook an archaeological desk-based assessment of the entire proposed pipeline route, and a walk-over survey of the section of the proposed route from Oddendale to Dalebanks Beck.

The landscape through which the proposed pipeline is routed contains numerous prehistoric sites. Neolithic and Bronze Age activity in the area is evidenced by several monuments, including Shap Stone Avenue, stone circles at Shap, Castle Howe and Oddendale, and ring cairns on Iron Hill and at Oddendale and Hardendale Nab. Iron Age/Romano British settlement sites are located to the south-east of the study area at Crosby Ravensworth, including Ewe Close, the best preserved Romano-British native settlement in North West England. Medieval settlement of the area can be seen in the small settlements of Oddendale and Hardendale with their associated strip field systems, fossilised in the current field boundaries. In the post-medieval and modern periods, extensive limestone quarrying has taken place, resulting in a number of current and former quarries and associated features, such as limekilns, being present in the study area.

In total, 113 sites of archaeological interest were identified during the desk-based assessment and walk-over survey. Thirty-three of these sites were recorded in the Cumbria Historic Environment Record (Sites **01-33**), twenty-three sites were recorded by the Quarry Extension Survey of 1996 (Sites **91-113**), seven sites were recorded from a map regression exercise (Sites **34, 80-82, 87** and **89-90**), five sites were recorded from consultation of aerial photographs (Sites **83-86** and **88**), and 45 sites were identified on the walk-over survey (Sites **35-79**). There is one Scheduled Monument (SM) within the study area which is Castle Howe Stone Circle (Site **05**), and three Grade II listed buildings (Sites **31-33**).

Prehistoric sites identified within the study area include a Bronze Age stone circle at the north end of the route (Site **05**), a possible prehistoric enclosure in Castlehouse Scar Plantation (Site **01**), and a Neolithic/Bronze Age ring cairn to the west of Oddendale (Site **02**). Castle Howe stone circle (Site **05**) is a Scheduled Monument, but the line of the proposed pipeline is outside the scheduled area. Although none of these monuments are located directly on the route of the proposed pipeline, they indicate the high potential for prehistoric archaeology in this area.

Twenty-three of the sites were identified as being potentially impacted upon during the construction of the proposed pipeline (Sites **12, 15, 34, 45, 51, 53-4, 57-8, 64-6, 73, 76, 79, 83-8, 96** and **106**). These include the medieval settlement of Oddendale (Site **79**) and a number of associated earthworks that comprise elements of the medieval strip field system (Sites **12, 45, 51, 54** and **64**). Two further areas of ridge and furrow, which could be medieval or post-medieval in date, will potentially be impacted upon by the pipeline

(Sites **15** and **58**). A medieval lane is located to the east of Oddendale (Site **53**), and a post-medieval lane runs parallel and to the north of it (Site **34**); the proposed pipeline route follows the post-medieval lane. Other post-medieval sites potentially impacted upon by the pipeline include the Shap to Wickerslack road (Site **79**), former field boundaries (Sites **85** and **86**), a sheep shelter (Site **76**), a pair of gateposts (Site **73**), quarries (Sites **65-6**) and a clearance cairn (Site **57**). Undated holloways are located to the west of Oddendale (Sites **83-4**), and further north, to the east of Hardendale (Site **88**).

Several recommendations for archaeological mitigation have been included in the report, but these will be subject to consultation with the Assistant Archaeologist, Cumbria County Council. If the route is varied away from the proposed line of the pipeline then a walk-over survey should be undertaken on the new route line. It is also recommended that a detailed topographic survey be carried out, prior to the commencement of construction works, for the earthwork sites east of Oddendale that are on the route of the proposed pipeline (Sites **12, 15, 45, 51, 54, 58, 64, 83, 84** and **88**). This survey would be within a corridor on either side of the pipeline and would serve to provide a context for any features revealed within the proposed pipeline trench.

Due to the presence of a number of confirmed sites along the remainder of the route and the high potential for further, as yet unknown remains, it is also suggested that a permanent presence watching brief is undertaken for the entire length of the easement. In addition, two areas of the proposed pipeline route are considered to be of high archaeological potential, and require further archaeological mitigation. The first is the area to the north and east of Castle Howe stone circle (Site **05**) and the area west of the potential prehistoric enclosure (Site **01**). The second is to the east of Oddendale, where the proposed pipeline crosses Sites **54** and **64**, an area of well-preserved medieval strip lynchets field system. In these areas it is recommended that the groundworks for the pipeline are carried out in an archaeologically controlled manner. This would require an archaeologist to supervise the level to which the ground is initially stripped and then the trench line would need to be manually excavated to record any features revealed in the strip. In the section east of Oddendale, it is recommended that the topsoil strip be kept to the minimum width so as to minimise the impact on the earthworks.

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Oxford Archaeology North (OA North) would like to thank Corus for commissioning the project, and in particular to Katherine Liddle and Alastair Dunn for their assistance. Thanks are also due to Jo Mackintosh at Cumbria County Council Historic Environment Record (CCCHER), to Jeremy Parsons (Assistant Archaeologist Cumbria County Council) and the staff at Cumbria County Record Office in Kendal.

Alistair Vannan and Kathryn Blythe undertook the desk-based assessment and Peter Schofield undertook the walk-over survey. Anne Stewardson produced the drawings. Jamie Quartermaine managed the project and also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Corus have proposed pipelines, *c* 4.6km in combined length, in two sections, to provide drainage from Shapfell Quarry, Cumbria. The northern section extends from the north side of Shapfell Quarry to Trainrigg Sike in the north (NGR NY 5902 1455 to NY 5798 1562) and the southern section from the north side of Shapfell Quarry to Dalebanks Beck in the south-east (NGR NY 5902 1455 to NY 6039 1361). The pipeline is proposed to be routed within the existing road from Shap to Oddendale, and on a track through agricultural land on the eastern side of Oddendale, to Dalebanks Beck (Fig 1). In accordance with a verbal brief from the Assistant Archaeologist, Cumbria County Council, Oxford Archaeology North (OA North) undertook an archaeological desk-based assessment of the entire proposed pipeline route, and a walk-over survey of the section of the proposed route from Oddendale to Dalebanks Beck.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The proposed pipeline (Fig 1) is located *c* 1.3km to the east of Shap, approximately 15km to the south of Penrith. The northern section of the proposed pipeline extends from the north boundary of Shapfell Quarry at Sandpot Hole, along the existing road, with Castlehouse Scar plantation on its east side, before turning west along the line of the existing 'C' road to Trainrigg Sike, The southern section extends from Sandpot Hole, following the road to Oddendale and then turns east of Oddendale to follow a track through agricultural land, terminating at Dalebanks Beck to the west of High Dalebanks. Just over 1km to the east of Oddendale is the village of Crosby Ravensworth located in the valley of the River Lyvennet. .
- 1.2.2 The proposed pipeline sections are located at *c* 300m AOD at the north end of the northern section, gradually rising to *c* 340m AOD to the north of Oddendale and sloping down to *c* 290m AOD at the south end of the southern section, towards Dalebanks Beck, a tributary of the River Lyvennet (Ordnance Survey 1982; Ordnance Survey 2002).
- 1.2.3 The underlying solid geological deposits comprise Tournaisian and Visean rock of the Carboniferous Limestone Series (BGS 2007), which is part of a limestone escarpment that extends south-east/north-west from the Kirkby Stephen area towards Carlisle; overlying this are areas of glacial till (*ibid*).

2. METHODOLOGY

2.1 DESK-BASED ASSESSMENT

- 2.1.1 **Introduction:** the desk-based assessment was carried out in accordance with the relevant IFA and English Heritage guidelines (*Standard and Guidance for Archaeological Desk-based Assessments (IFA 1999)*; *Management of Research Projects in the Historic Environment (MoRPHE)* (English Heritage 2006)).
- 2.1.2 A study area that extended 0.25km on either side of the proposed pipeline routes was examined. All known archaeological sites identified have been integrated into the Historical and Archaeological Background (*Section 3.1*) in order to assess the impact of the proposed pipeline. The locations of these sites are shown in Figures 2 3 and 4.
- 2.1.3 Several sources of information were consulted as part of the assessment, which have provided a good understanding of the developmental history of the study area. Sources that were consulted include:
- **Cumbria County Council Historic Environment Record (CCCHER):** the Historic Environment Record held in Kendal was consulted to establish the presence of sites of cultural heritage interest already known within the study area.
 - **Cumbria County Record Office, Kendal:** cartographic and secondary sources relating to the study area were consulted at the Record Office.
 - **OA North Library:** OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out both as OA North and in its former guise as the Lancaster University Archaeological Unit (LUAU). These were consulted where necessary.
- 2.1.4 **Rubber Sheeting of Historic Maps:** scans of historic maps were spatially georeferenced within ArcMap and then transferred into AutoCAD. Once transformed the historic mapping was overlain with a plan of all features identified during the walk-over survey.

2.2 WALK-OVER SURVEY

- 2.2.1 Following the desk-based assessment, a level 1 type survey was undertaken (*Section 4*) to relate the existing landscape to research findings (OA North 2002). The survey examined the line of the pipeline to the east of Oddendale, and was undertaken in four stages: reconnaissance, GPS mapping, photography and description. The survey was intended to examine and record all archaeological features or monuments within the landscape and used differential GPS to map features identified.
- 2.2.2 **Reconnaissance:** the first stage of reconnaissance was undertaken by close field walking, which varied from 15m - 20m line intervals depending on visibility (as affected by tree density), terrain and safety considerations. All sites noted were recorded. The survey aimed to identify, locate and record archaeological sites and

features on the ground. Those sites already identified by the archival study were checked against their entry, which was enhanced, where appropriate.

- 2.2.3 **GPS Survey:** the identified sites were recorded by differential GPS survey and the data was digitally superimposed with the OS mapping. The particular hand-held GPS used can achieve accuracies of +/- 1.0m. The method recorded the location, extent and, in places, detail of the identified features.
- 2.2.4 **Photography:** in conjunction with the archaeological survey a photographic archive was generated, which recorded significant features, as well as aspects of the general landscape. This photographic archive was maintained using black and white 35mm film and a digital camera with 8.0mega pixel resolution.
- 2.2.5 **Description:** a descriptive record of all features was created. The data was input on site into a palm computer, and was then transferred into an Access 97 compatible database. The description incorporated a provisional interpretation of each feature's function and a provisional interpretation of the site's chronology.

2.3 GAZETTEER OF SITES

- 2.3.1 All of the information concerning archaeological sites within the assessed area has been collated into a gazetteer (*Appendix I*), which provides details of their location, period, character and significance. Locations are given as ten-figure National Grid References where possible, and the position of each site is indicated on a map of the study area (Figs 2 and 3).

2.4 ARCHIVE

- 2.4.1 A full archive has been produced to a professional standard in accordance with current English Heritage guidelines (1991) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The archive is provided in the English Heritage Centre for Archaeology format, both as a printed document and digitally. The archive will be deposited with the Cumbria County Record Office, along with a copy of the report.

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 INTRODUCTION

3.1.1 The following section presents a summary of the historical and archaeological background of the general area. This is presented by historical period, and has been compiled in order to place the study area into a wider archaeological context.

Period	Date Range
Palaeolithic	30,000 – 10,000 BC
Mesolithic	10,000 – 3,500 BC
Neolithic	3,500 – 2,200 BC
Bronze Age	2,200 – 700 BC
Iron Age	700 BC – AD 43
Romano-British	AD 43 – AD 410
Early Medieval	AD 410 – AD 1066
Late Medieval	AD 1066 – AD 1540
Post-medieval	AD 1540 – c1750
Industrial Period	C AD1750 – 1901
Modern	Post-1901

Table 1: Summary of British archaeological periods and date ranges

3.1.2 **Mesolithic-Bronze Age (c 10,000–700 cal BC):** during the Mesolithic period the inhabitants of the British Isles employed a subsistence strategy traditionally viewed as the exploitation of natural resources by activities based on hunting, gathering, and fishing. Approximately commensurate with the adoption of farming, from c4000 BC, the Neolithic period saw an increase in more permanent settlement, and the beginnings of widespread construction of monumental architecture. The Bronze Age developed gradually from the preceding Neolithic during the mid third millennium BC, although beyond the appearance of metal artefacts the distinction is somewhat over stressed (Hodgson and Brennand 2006, 29-30).

3.1.3 In the 1980s Iron Hill, Hardendale Nab and Seal Howe were walked as part of a larger survey of the limestone uplands in eastern Cumbria (Cherry and Cherry 1987). Although little of this land is used for arable cultivation, which would allow for examination of ploughed fields, mole hills, earth from rabbit burrows, and other eroded areas were examined for finds. As a result, a number of lithic artefacts were recorded within these areas, as well as a sherd of Grooved Ware and a sherd of Peterborough Ware found at separate sites on Seal Howe. Although some characteristically Mesolithic lithics were found within the assemblage, the types of finds recovered predominantly point towards occupation of the area between Seal Howe and Oddendale in the Late Neolithic/Early Bronze Age (*op cit*, 11-12; Turnbull and Walsh 1997, 13). Site **29** is the findspot of a short, finely-made end scraper of honey-coloured flint, that had been steeply retouched, and was found during field survey in 1992 by Jim Cherry (HER 16759).

3.1.4 There are a number of monuments in the marginal uplands and valleys of the wider area which further testify to the extensive use of this area in the Neolithic/Bronze Age, including stone circles, cairns and barrows. One of the most noted monuments is the standing stones of the Shap Avenue, which are to the west of Shap, c 2.5km to the west of the proposed pipeline route; these date to the Late Neolithic period by analogy with more securely dated monuments (Clare 1978). The site is a

Scheduled Monument (SM 22496) and includes 14 individual stones in the Shap area, but there were certainly many more which have not survived, and survey results have suggested that the alignment may have extended over 3km (Burl 1993, 47; Hodgson and Brennand 2006, 39). Antiquarian accounts (Nicholson and Burn 1777; Hall 1824) clearly show that the stones were being broken up for use in buildings or to clear land for enclosure and agriculture in the late eighteenth and early nineteenth centuries. Thomas Routh, working in 1743 as William Stukeley's surveyor (responsible for planning and surveying Avebury and Stonehenge), commented that the avenue had an appearance of being a double row (Lukis 1894, 314).

- 3.1.5 Stone circles are of two basic types: the first are typically of Neolithic date, comprising large open circles fulfilling a primarily ritual function. The second are the smaller circles, which were primarily burial monuments and typically date from the Bronze Age. Scheduled stone circles in the area include those located at Shap, *c* 2.5km to the south-west of the proposed pipeline route (SM 22498); to the south of Oddendale, *c* 450m to the south of the proposed route (SM 22450), *c* 2km to the south of the proposed route (SM 22457); and within the study area at Castlehowe Scar (SM 22451; Site **05**). Shap stone circle (SM 22498) measures *c* 24m diameter, and includes six large fallen rounded pink granite boulders and 11 smaller rounded granite stones lying between and adjacent to the larger stones. Only the western half of the stone circle is now visible; the eastern half extends under the adjacent railway embankment. The stone circle to the south of Oddendale (SM 22450) comprises an outer circle 26.3m in diameter of 34 pink granite boulders, and an inner circle 7.5m in diameter of 23 smaller pink granite boulders. The inner circle forms the kerb of a small cairn standing up to 0.3m high, from which earthfast stones protrude. Between the inner and outer circles, in the south-west quadrant, are several smaller stones. Immediately north of the outer circle is a small group of associated outlying stones. An antiquarian investigation of the central cairn recorded evidence for burning (SM 22450). To the south-east of the Oddendale Stone Circle, on White Hag, is the Crosby Ravensworth Stone Circle (SM 22457), measuring only 6m in diameter, it comprises 11 fallen granite boulders, and has a series of outlier stones. Site **05** (Plate 1) is a small stone circle, comprising 11 variably spaced boulders with a diameter of *c* 5m. Of these, 10 are rounded pink granite and one is hewn blue granite. Some of the stones have fallen from their original positions, including the blue granite stone, which is one of two large stones on the southern side of the circle. This monument is not thought to have been excavated.
- 3.1.6 Round cairns are considerably more common than stone circles and are typically circular mounds of stone placed over individual burials which were either inhumations or cremations set within a stone-lined cist, and predominantly date from the Bronze Age (Quartermaine and Leech forthcoming; Yates 1984). Ring cairns are a variant form of the stone circle, comprising a circular ring bank made up of stones, and sometimes with cremations within the interior of the ring (Lynch 1979; these are typically of middle or late Bronze Age date (Quartermaine and Leech forthcoming).
- 3.1.7 Extant Scheduled cairns in the area include a round cairn on Dale Moor, *c* 700m to the south of the proposed pipeline route (SM 22474) and a round cairn north-west of Seal Howe, *c* 700m to the south of the eastern end of the proposed pipeline route (SM 22452). The monument on Dale Moor (SM 22474) is a round cairn comprising

a turf-covered oval mound of limestone rubble measuring 10.5m by 9m and standing up to 0.75m high. Two boulders on the edge of the north-eastern quadrant of the cairn are the remains of a kerb. Limited antiquarian investigation at the centre of the cairn located an inhumation, an urn, and disc beads of brown lignite. The monument at Seal Howe (SM 22452) includes a slightly oval mound of limestone and earth, measuring 14m by 13m and standing up to 1.4m high. Limited antiquarian investigation located the remains of a male inhumation at the centre of the monument and an urn containing the cremated remains of a woman and child to the south, as well as some ox bones (SM 22452).

- 3.1.8 A cairn was excavated at Hardendale Nab in 1986, approximately 1.2km to the west of the proposed pipeline route (NGR 5814 1401), in advance of a quarry extension (Williams and Howard-Davis 2004). The cairn measured *c* 16.5m in diameter and stood up to 0.8m high, and it appears to have been constructed in the Early Bronze Age. The first broad phase comprised a simple stone cist burial and small mound, with a number of secondary burials, comprising cremations and disarticulated human bones, made around it. The mound was covered with a layer of limestone chippings, which would have made it stand out in the landscape, a practice which is well documented in southern England with chalk-topped mounds. The second phase comprised the erection of a ring cairn enclosure around the mound, as well as a number of inhumations and cremations, which were mostly concentrated in the southern portion of the monument. The ring cairn externally measured 11m north/south by 10m east/west, and varied in thickness between 1m and 1.8m. It was constructed of large limestone slabs and granitic and basaltic erratics, and had an entrance 0.8m wide in the south-west area. The third phase saw the infilling of the ring with loose limestone rubble, with three further cremation burials. The whole monument was covered in another layer of rubble in the fourth phase, into which a number of inhumations were cut. In total, at least 11 cremated and five unburnt individuals were identified, but the burnt and unburnt bones of many others were present throughout the cairn, indicating the importance and use of this monument over an extended period (*ibid*).
- 3.1.9 Site **02** is a ring cairn located to the north-west of Oddendale, *c* 250m to the west of the proposed pipeline route (Turnbull and Walsh 1997). The site was fully excavated in September 1990, in advance of a quarry extension. Four main phases of activity from the Neolithic to the Early Bronze Age, were identified at the site. The earliest of these, Phase I, was of a Late Neolithic date and was represented by two roughly concentric circles of large post pits, which would have accommodated the upright timbers of a major ceremonial monument. Both circles comprised 12 posts, with the inner circle measuring *c* 12m in diameter, and the outer circle measuring *c* 18m; although both were fairly irregular in shape. The only finds were animal bone and charcoal (*op cit*, 17-19). Phase II saw the loss of the timber posts and the tops of the post pits were subsequently sealed or capped with boulders, and at this time, the monument would have appeared as two concentric circles of low boulders (*op cit*, 19). Phase III, dating to the Early Bronze Age, comprised a ring cairn of boulders, the bank of which was exactly overlying the inner circle of boulders. Finds included two flint knives, isolated sherds of pottery and cremated bone. A shallow central grave was probably associated with this phase and a small amount of bone suggested a crouched burial; there were also a few sherds of Collared Urn food vessel, and a sherd of AOC (all-over-corded) Beaker (*op cit*, 21-22). During Phase IV, a rectangular platform, *c* 4m by 2m, was constructed of large

boulders of pink granite on the south side of the ring cairn. A façade, *c* 5m in length, was also constructed of granite boulders on the south side of the ring cairn. Uncremated bone was found on the surface of the platform, which indicated its possible use for excarnation (*op cit*, 22-23).

- 3.1.10 Site **03** is recorded in the HER (SMR 1573) as a ring cairn and is located *c* 100m to the south-east of Site **02**, and was recorded as measuring 13.5m in diameter, with a dished centre. The site could not be located during a visit made by English Heritage in 1992, and it was concluded that the cairn may have been destroyed when Hardendale Quarry was extended; it is highly likely that this is the same site as Site **02**.
- 3.1.11 Scheduled funerary monuments include a round cairn on Wickerslack Moor, *c* 1km to the east of the proposed pipeline (SM 22479); a bowl barrow at High Haber, *c* 1km to the north of the east end of the proposed pipeline (SM 22459); and two cairns on Iron Hill, *c* 400m to the east (SM 22458 and SM 22463). The cairn on Wickerslack Moor (SM 22479) has an oval mound of earth and stone, measuring 13m by 9m, and stands up to 0.6m high; it is not known to have been excavated. The barrow at High Haber (SM 22459) includes a slightly mutilated flat-topped oval earthen mound, measuring 12m by 10m and standing up to 0.8m high. Evidence for funerary remains was found during limited antiquarian investigation of the centre of the monument (SM 22459). A round cairn, located towards the north-westerly edge of the summit ridge of Iron Hill (SM 22458), includes a slightly oval mound of earth and stones measuring 14m by 12m, and stands up to 1m high. There is a kerb of 11 pink granite boulders around the southern part of the cairn and socket holes indicating the location of a further seven kerbstones, which were removed during the 1980s from the northern area of the barrow. The monument is not known to have been excavated. A cairn on the westerly edge of the summit ridge of Iron Hill (SM 22463), includes a sub-oval mound measuring 6m by 5m, and standing up to 0.3m high. There is a partial ring of seven rounded pink granite boulders, formerly part of a kerb that surrounded the mound, with two more similar boulders lying a short distance to the north-east. Four boulders scattered on top of the mound are thought to be part of a cist. Limited antiquarian investigation at this site located the bones of a male human, part of a deer antler and animal bones (SM 22463).
- 3.1.12 Sites **112** and **113** consisted of single findspots of chert flakes, found during the evaluation works prior to the extension of Hardendale Quarry (LUAU 1996). These comprised an irregular waste flake from Trench 47 and an unretouched flake from Trench 50. Due to the poor quality of the chert it was difficult to determine the nature and technology of the flint material. The retrieved material included only one demonstrably worked flake which suggests the level of activity was very low. It was not possible to attribute a date to this material.
- 3.1.13 **The Iron Age (*c* 700 cal BC – AD 43):** a comparative lack of material culture in the North West relating to the Iron Age has historically made sites of this period difficult to identify in the archaeological record, particularly with reference to small-scale rural sites. Both the uplands and lowlands of Cumbria have produced evidence of enclosures that may date to the Iron Age, although there is a lack of dating evidence from these sites (Hodgson and Brennand 2006, 52).
- 3.1.14 There appears to have been a partial abandonment of the uplands in the early Iron Age, possibly due to a deterioration of the climate (Quartermaine and Leech

forthcoming). This put pressure on the better lowland agricultural land, and as a result, hillforts and enclosed settlements were established to protect these areas. Multivallate hillforts, with possible Iron Age origins, are known from the surrounding region at Castle Craggs, on the west side of Haweswater (LUAU 1997a); the Wasdale Foot settlement, to the south of the study area on the Shap Fells; and at Scarside Plantation, c 5.5km to the north-west of the study area (SM 22511). Enclosed settlements were characterised by having prominent outer enclosing walls or banks, typically topped with a palisade, and containing a series of grouped round houses. Approximately 6km to the south-east of the proposed pipeline route is an example of an enclosed settlement at Castlefolds, Orton (SM 23634) which occupies a flat-topped limestone knoll close to the summit of Great Asby Scar. The enclosure has an irregular shape with a prominent external stone wall/rampart and the remains of at least 12 roughly circular round houses arranged against the inside of the enclosure bank. The emphasis of its form is on the inaccessible location, with a strongly defended stone enclosure wall, which indicates that the defence of the settlement was a high priority in its design.

- 3.1.15 ***The Romano-British Period (c AD 43 – AD 410)***: Roman forts are located at Low Borrowbridge, 12.4km to the south-south-east of the proposed pipeline route and at Brougham c 14.5km to the north-west. Both forts are on Wicker Street, the Roman road from Manchester to Carlisle which runs through the eastern part of the Lake District and was the primary north/south communication line through North West England for the substantial Roman forces stationed on Hadrian's Wall (OA North 2005). The road is located approximately 400m to the east of the proposed pipeline route, and is partly within the scheduled area of Ewe Close (SM 22476; *Section 3.1.16*); it measures 7.6m in width.
- 3.1.16 Despite the considerable presence of the Roman army throughout the region, the cultural impact on the native population was slight. The settlements occupied during this period were developments of the enclosed settlements prevalent during the Iron Age. They incorporated outer defensive banks even though the presence of the Roman army, maintaining local peace, made them somewhat redundant (OA North 2005). A number of these types of sites are located close to the study area in particular the Scheduled Romano-British enclosed settlement and associated field system at Ewe Close (SM 22476), is located on the Roman road c 370m to the south-east of the east end of the proposed pipeline route. Several other Romano-British sites are, like Ewe Close, located around the head of the Lyvennet valley, and include a scheduled enclosure and associated field system at Wickerslack, c 1km east of the northern end of the proposed pipeline route (SM 22478); and a scheduled settlement and farmstead (SM 22477) at Ewe Locks c 1km to the south-east of the south end of the proposed pipeline route.
- 3.1.17 Ewe Close (SM 22476), situated on a gently graded north-east facing hillside above Dalebanks Beck, is the most substantial Romano-British native settlement in North West England. Limited excavation of the monument took place in 1907-8 (Collingwood 1908), The monument includes a stone-walled enclosure measuring c 70m square with rounded angles and a gate almost centrally placed in the south side. In the centre of the enclosure is a large circular stone hut with an internal diameter of 15.2m. Close by is a small hut containing a furnace, and clustered around the gateway are nine other small huts. There is a well at the eastern side of the enclosure and a rectangular stock pound at the western side. The eastern side of the enclosure is sub-divided into two smaller enclosures. East of the main enclosure

are a series of sub-rectangular fields, some containing stock pounds, whilst to the south there is a group of nearly a dozen circular stone huts and a stock pound. The excavation produced finds that included pottery from the second, late third, and early fourth centuries AD, and it was accordingly dated to the Romano-British period and has become the type-site for Roman native settlement in the region. However, given that they were reliant on ceramics for dating and the Iron Age was largely aceramic, there exists the possibility that the settlement had its origins prior to the Roman period.

- 3.1.18 The settlement at Ewe Locks (SM 22477) includes an oval-shaped stone-walled enclosure containing two hut circles at its south-eastern side that open on to a yard. The remainder of the oval enclosure is sub-divided into three fields with the main entrance in the north-easterly field. Adjoining the south-western side of the oval enclosure is a rectangular enclosure measuring *c* 48m by 44m that has an entrance on the eastern side, and contains two stock pens at its north-east corner, together with faint traces of two circular huts towards the centre. Sixty metres south of the enclosure is a farmstead that includes one hut circle and three small sub-rectangular fields. There are traces of a stone wall running south from the rectangular enclosure of the settlement, passing immediately to the west of the farmstead, and continuing in a southerly direction for a short distance.
- 3.1.19 The monument at Wickerslack (SM 22478) includes the turf-covered stone walls, standing up to 1m high, of at least eight hut circles that vary in internal diameter from *c* 3.6m to 6.4m. There are three associated fields to the east of the huts, two sub-circular and one rectilinear, with traces of a stock pen in the southerly field. There is a second stock pound located between the southerly field and two huts to the west. The western part of the site, including the area occupied by the huts, is enclosed by a rectilinear boundary wall that joins the southern field boundary wall and, although not well defined on the north-east side, appears to have joined up with the northern field boundary wall. Limited antiquarian investigation of some of the hut circles has located paved floors and hearthstones.
- 3.1.20 Site **09** is an Iron Age/Romano British farmstead located *c* 250m to the north of the eastern end of the proposed pipeline route. Earthworks suggest a series of enclosures or compartments situated on high ground above Dalebanks Beck, and extending out into surrounding fields. There is a very deep holloway, which appears to extend from the settlement southwards down to the beck. Just above Dalebanks Beck, the earthwork features ends in massive banks at NY 604 137 (immediately north of the proposed pipeline route), where they join the track from Oddendale to Crosby Ravensworth (Site **34**).
- 3.1.21 **Early Medieval (AD410 - 1066):** as is the case throughout Cumbria, evidence for early medieval activity from excavations and surviving remains is extremely limited. Following the cessation of organised Roman military occupation in Britain, most of Cumbria became part of the rapidly fluctuating early medieval kingdoms in the region: firstly Rheged in the sixth and seventh centuries and then the expanding and conflicting kingdoms of Northumbria and Strathclyde (Higham 1986; Bingham 1995). Evidence for rural settlement is beginning to emerge at sites such as Fremington, 3km south-east of Penrith (Oliver *et al* 1996, 127-169), Bryant's Gill in Kentmere (Dickinson 1985) and at Shap, where evidence for timber buildings was found and loom-weights were recovered (Heawood and Howard-Davis 2002). There is also some evidence for the re-use of prehistoric burial mounds in the early

medieval period (Newman 2006, 102). At Hardendale Nab (NGR 5814 1401) an early medieval strap end was recovered from a cairn excavated in 1986 (Williams and Howard-Davis 2004).

- 3.1.22 **Medieval (AD 1066 - 1540):** Norman centres appear to have been established in the area around Kendal shortly after the Conquest in 1066. However, it was not until 1092 that the Normans were able to take full control of Cumbria (Bingham 1995), and the resultant political divisions appear to have been based on already existing entities (Winchester 1987).
- 3.1.23 Shap was the site of the Abbey of St Mary Magdalene, a house of Premonstratensian or 'White' Canons, and the only Norman abbey in Westmorland (SM 22495; located just under 3km to the west of the proposed pipeline route). It was originally founded in *c* 1191 at Preston Patrick in Kendal, some 20 miles south of Shap, by Thomas de Workington, and was moved to *Hepp* (Shap) in *c* 1201 (Butler and Given-Wilson 1979, 344). In addition to their ecclesiastical duties, the canons of Shap Abbey were also major landowners in the area and, as such, their administrative and financial interests would have affected much of the region. Although, at its most populated, the abbey housed only 20 canons, it is evident that it controlled much of the surrounding area extending from Shap westwards towards the north-east bank of the old Haweswater Lake and then southwards to include Swindale, and Sleddale.
- 3.1.24 Hardendale medieval dispersed settlement (SM 32823) is located *c* 600m to the west of the proposed pipeline route. The monument includes earthworks and buried remains of the settlement, which is considered to have been founded as a medieval monastic grange during the thirteenth century. Although the date of the first settlement at Hardendale is unknown, the placename is first mentioned in documentary sources in 1235 (Smith *et al* 1867). Despite its proximity to Shap, Hardendale belonged to Byland Abbey in Yorkshire until the Dissolution in the sixteenth century, and is considered to have been a monastic grange specialising either in cattle or sheep farming. To the west of the main street is a relatively regular arrangement of three building platforms and assorted crofts and rectangular enclosures which predate the existing post-medieval field system. This complex of building platforms and enclosures forms a 'compartment', behind which are the earthwork remains of a back lane running approximately parallel with the main street. Other earthwork remains of the medieval settlement, including a boundary bank, small enclosures and faint traces of building platforms, lie to the east of the main street in a triangular-shaped area of land west of Hardendale Hall.
- 3.1.25 Oddendale (Site 79) is recorded as *Odehenedale* in 1262 (Smith *et al* 1967), and is thought to be derived from a German personal name: Odelin or Odelina, which was used independently in England from the time of the Domesday Survey (Smith 1967, 157). Oddendale comprised three farms, and was part of the Barony of Westmorland held by the Clifford Family (Whellan 1860; Nicholson and Burn 1777, 274-5). As with Hardendale, extensive earthworks including strip fields and ridge and furrow can be seen in the area immediately surrounding it.
- 3.1.26 The strip field system was where plots of land were communally managed and rotated in terms of produce grown, grazing use or lying fallow (Williamson 2003, 148-54). The characteristic features of this former landscape are the remains of long narrow, reversed 'S'-shaped strips of ridge and furrow which represent individual working plots within the field. The ridge and furrow undulations having

resulted from the use of animals, mostly oxen, to plough the land and the reversed 'S'-shape reflecting the necessarily long turning circle for these animals. When the open fields were eventually enclosed, the field boundaries followed the lines of the internal cultivation strips, and so the resultant strip fields often fossilise the sinuous shape of the oxen-ploughed ridge and furrow (*ibid*).

- 3.1.27 The Roman roads through the Lake District continued to be used in the medieval period and later. Packhorse routes were also used in the medieval period, which were not built or maintained (Hindle 1984). The existence of the abbey at Shap contributed towards the development and use of roads and packhorse routes in the area. The canons of Shap Abbey travelled to and from their administrative and diocesan centre of Carlisle and would have needed to transport goods to and from the market centres of Penrith and Kendal (Butler and Given-Wilson 1979, 344). Over many centuries of use, the erosion of these routes has formed deep gullies or holloways. When these became too deep or impassable, a new line was adopted. Over time frequently used routes would be characterised by many interlinked parallel lines of holloways (Hindle 1984). Extensive lines of holloways can be seen across the study area and, in particular, to the south of Oddendale (Sites **83**, **84** and **88**), and followed the natural route line between Tebay gorge, the principal north/south conduit in the region, and Penrith.
- 3.1.28 Two medieval shielings are located north of Blea Beck (SM 22477), within the Romano-British settlement at Ewe Locks, at the north-east corner of the rectangular enclosure and adjacent to the southern wall of the oval enclosure (*Section 3.1.17*). Each shieling measures c 6.1m by 4.5m internally, with walls made of boulders in a double line standing on edge.
- 3.1.29 A medieval farmstead overlies part of the Romano-British sub-rectangular field system and some of the unenclosed stone hut circles at Ewe Close (*Section 3.1.16*), and is included in the scheduled area (SM 22476). The farmstead includes a rectangular stone building, a paved farmyard or stock pound, and a small outbuilding. A series of banks associated with the farmstead surround the site, whilst to the south are the foundations of two rectangular structures that were constructed against the remains of a stone boundary wall.
- 3.1.30 *Post-medieval (AD 1540 – c 1750) and Industrial-Period (1790-1901)*: the CCCHER lists a number of quarries (Sites **16**, **18**, **19**, **20**, **21**, **23**, **24**, **26**, **30**) and associated limekilns (Sites **27** and **28**) located in the study area. Limestone was quarried either for use as stone or tile (Marshall and Davies-Shiel 1977, 159) or, once burnt, had numerous uses including lime wash, and lime mortar. The lime was also used in agriculture, where it was spread on the fields to help neutralise soil acidity and aid absorption of nutrients from manure (Mawson 1980, 137); this use was probably in practice by at least the sixteenth century.
- 3.1.31 A significant development of the seventeenth to nineteenth century period in the Shap area was that of wheeled traffic, in conjunction with the turnpiking of the Old Shap Road in 1753. Until this point most traffic between Kendal and Penrith had travelled by packhorse up the Kentmere valley, over the Nan Bield Pass and into the Haweswater valley (LUAU 1997b; Hindle 1998). The road from Kendal to Penrith skirted east of the valleys of Longsleddale and Swindale, encouraging the development of the market town of Shap. Later, in the nineteenth century, the route enabled the development of large-scale quarrying for Shap granite, slate and limestone (Hindle 1998).

- 3.1.32 There are three Grade II Listed Buildings within the study area, all in Oddendale. Site **31** is an eighteenth century house with nineteenth century barns; Site **32** is Oddendale Hall, dating to the seventeenth century and with an eighteenth century threshing barn; and Site **33** is Oddendale Old Hall, dating to the seventeenth century, with a horse and cart shed.

3.2 PREVIOUS ARCHAEOLOGICAL WORK

- 3.2.1 **Survey of the limestone uplands of Eastern Cumbria:** a large survey of the limestone uplands of Eastern Cumbria was undertaken in the 1980s (Cherry and Cherry 1987). This included walking Hardendale Nab, to the west of the proposed pipeline route and Iron Hill and Seal Howe to the east and south of the proposed pipeline route. A number of lithics were picked up in this area, as well as some third-second millennium BC pottery (*Section 3.1.3*).
- 3.2.2 **British Gas:** a British Gas pipeline ran north/south to the west of Hardendale Quarry. One possible field system was recorded to the north-east of the study area (Site **11**), during the construction of the pipeline.
- 3.2.3 **Transco Pipeline:** a Transco gas pipeline extended through the study area, on the east side of Castlehouse Scar Plantation, and continuing south of this, on the west side of the road to Oddendale and on the west side of the settlement. Recent aerial photographs show the line of the pipeline truncating the two areas of holloways to the west of Oddendale (Site **83** and **84**). It was rerouted around the quarry extension in the early 1990s.
- 3.2.4 **Hardendale Nab Cairn:** a cairn was excavated at Hardendale Nab in 1986 (Williams and Howard-Davis 2004), approximately 1.2km to the west of the proposed pipeline route (NGR NY 5814 1401), in advance of its destruction by quarrying (*Section 3.1.8*).
- 3.2.5 **Oddendale Ring Cairn:** a ring cairn (Site 02) located to the north-west of Oddendale, c 250m to the west of the proposed pipeline route, was fully excavated in September 1990 (Turnbull and Walsh 1997), in advance of a quarry extension (*Section 3.1.9*).
- 3.2.6 **Shell North Western Ethylene Pipeline:** an ethylene pipeline was constructed in 1991 from Grangemouth in Scotland to Stanlow in Cheshire. Archaeological work on the pipeline was carried out by LUAU between 1988 and 1994 (Lambert 1996). The pipeline crosses the north-western end of the study area, to the east of Trainriggs and runs on the west side of the settlement at Hardendale. One area was investigated within the study area, the site of a pit and enclosure noted on aerial photographs (Site **17**). These features were identified, but could not be dated. To the south of the study area, on the west side of Hardendale, a derelict stone structure, areas of post-medieval ridge and furrow, and possible medieval field systems were recorded. Also in this area was a group of banked enclosures and building platforms, with associated lynchets and ridge and furrow, which were all interpreted as part of a deserted farmstead. Further elements of this farmstead were found to the south, below Hardendale Nab (*op cit* 22). A number of flints and chert fragments were also recorded in this area during field walking (*op cit*, 22; Cherry and Cherry 1987, 5).

3.2.7 **Hardendale Quarry Extension:** an archaeological survey and evaluation was undertaken in advance of an eastwards extension to the Hardendale Quarry (LUAU 1996). Twenty three sites (in the present study area) were identified in the course of this programme, and comprised mostly small quarries, trackways and a limekiln (Sites **91-113**). A small, undated, sub-circular staked structure was excavated within trench 30 (Site **111**), and two worked flints were recovered in excavation of trenches 47 and 50 (Sites **112** and **113**). Although the sites were within the study corridor, they have for the most part now been lost as a result of the subsequent expansion of the quarry.

3.3 MAP REGRESSION ANALYSIS

3.3.1 **Jeffery's Map of Westmorland, 1768 (Plate 2):** this map is large-scale and, as such, contains little detail of the study area. The west/east road from Shap to Wickerslack (Site 87), at the north extent of the proposed pipeline route, is marked on the map. To the north of the road, in the location of the present day Castlehowe Scar, a place named 'Scar' is marked with a point, although no buildings are depicted. To the south-east of this, the rectangular plantation of Castlehouse Scar is depicted. Some distance to the west of the plantation the settlement of Hardendale is depicted as a scatter of buildings. Oddendale is depicted in the same way, and Dalebanks Beck to its east, is also marked, although not labelled. Between the two villages an area of high ground is labelled as 'New Intack', suggesting that it was recently enclosed land.

3.3.2 **Tithe maps, 1845 (WDRC/8/114 and WDRC/8/118):** the west end of the proposed pipeline route and the village of Hardendale are within Shap parish, which was divided into a number of townships, not all of which have tithes. Reagill township tithe of 1845 was consulted at Kendal Record Office, which showed little detail of the study area except a 'Druid's Circle' (Site **05**) and a 'Stooping Stone' (Site **22**). The remainder of the study area is within Crosby Ravensworth Parish, the 1845 tithe of which was only partially available at the time of the visit to Kendal Record Office, due to it being conserved. The available tithe (Plate 3), shows the settlement of Oddendale, with its associated fields, predominantly on the east side of the village. A small area of narrow fields is located to the south of the village and larger fields are shown to the north. The accompanying tithe award was not available and therefore any additional information, such as land owners and field names, is not known.

3.3.3 **Ordnance Survey (OS) First Edition 6": 1 mile map of 1863 (Figs 5 and 6):** Trainrigg, at the north-eastern end of the proposed pipeline route, is depicted on this mapping, and a beck name, Trainrigg Sike, is shown running approximately north/south on its east side. To the east is the farmstead of Castlehowe Scar, which is linked to Hardendale by a zig-zagging track through the fields. The parish boundary between Shap and Crosby Ravensworth is shown in this area as running southwards along Trainrigg Sike and then turning to the east on the line of the two Thunder Stones (Sites **22** and **81**) and the stone circle (Site **05**), at which point it turns south, running on the west side of Scar Plantation (now named Castlehouse Scar Plantation). To the north-west of Oddendale, west of the study area, the parish boundary crosses a point named 'Deadman's Grave', possibly indicating a known site in this area.

- 3.3.4 Scar Plantation is divided east/west towards its northern end, with the northern section depicted as less densely planted. In this area, a small, roughly circular enclosure is shown (Site **01**). The route of the proposed pipeline follows a track, which runs down the west side of the plantation. The Hardendale Stone (Site **25**) is shown a short distance to the west. The south-west corner of the plantation is labelled 'Sandpot Hole', and a small circular feature (now removed by quarrying) is shown a short distance to the south, to which the name may refer. The proposed pipeline route then turns east, along a track to the south of the plantation, before turning south across an area of unenclosed land. A limekiln (Site **27**) is shown at the north-east corner of a small square enclosure, and 'Grandy Quarries' (Site **26**) are marked to the south of this. The route of the proposed pipeline joins a track, which runs on the outside of the fields to the north-west of Oddendale, and turns southwards to enter Oddendale at its west end. An 'old limekiln' (Site **28**) is marked in this area, and a limekiln is also marked just outside of the study area at High Dalebanks. The route of the proposed pipeline follows a track, which runs through the fields east of Oddendale to High Dalebanks (Site **34**). Fields are shown to the south of this track, for a short distance, beyond which the area is unenclosed. Several fields are marked in this open area, and, further south, Oddendale concentric stone circle is marked and labelled 'Druidical Circles'.
- 3.3.5 *Ordnance Survey First Edition 25": 1 mile map of 1859*: this mapping was very similar to the 6" map, although there were gaps in the coverage. Of note is the more detailed depiction of Site **01**, which, if the dotted depiction of its outline indicates stones, looks to comprise 14 stones, in a sub-oval layout. However, other known stone circles tend to be labelled as Druid's Circle or similar and, therefore, it is not certain exactly what form this feature took. Quarries are shown to north of this site, and to the west, across the track which runs along the west side of the plantation.
- 3.3.6 *Ordnance Survey Second Edition 6": 1 mile map of 1899 and 25" of 1897*: by the time of this mapping the north end of Scar Plantation is also densely planted with trees, and Site **01** is no longer depicted. The remainder of the study area is depicted much as it was on the first edition, with additional areas of quarrying, including an area to the north-east of Oddendale (Site **82**). The limekilns (Sites **27** and **28**) are not shown on this mapping.
- 3.3.7 *Ordnance Survey 6": 1 mile map of 1919-20 and 25" of 1913*: no significant changes from the second edition were noted on this mapping.

3.4 AERIAL PHOTOGRAPHY

- 3.4.1 Oblique black and white photographs from the 1970s and 1980s held at the Cumbria HER, and recent colour vertical photographs displayed on Google Earth were examined for additional features on the route of the proposed pipeline. As a result, five sites were added to the gazetteer, and are plotted on Figs 2, 3 and 4 (Sites **83-86** and **88**). Those sites to the east of Oddendale were verified by the walk-over survey (*Section 4*) (Fig 4).

4. WALK-OVER SURVEY

4.1 INTRODUCTION

- 4.1.1 The eastern section of the proposed pipeline route, to the east of Oddendale, was visited in order to relate the existing topography and land use to the desk-based assessment findings. This served to assess evidence not available through documentary sources, and to highlight the presence of any areas of surface detail of archaeological interest. The walk-over survey concentrated on the stretch of the route from immediately to the east of the farmyard at Oddendale Hall Farm and ran as far as the eastern end of the pipeline route (some 0.945km of the c 5.6km long route) (Figs 3 and 4). The visit also provided an understanding of the impact of the proposed pipeline route and the presence of any immediately visible constraints to the undertaking of intrusive investigation works.
- 4.1.2 All of the fields adjacent to the proposed pipeline route were walked systematically and the ground conditions were generally very good for identifying sites by walk-over survey. All of the fields inspected were under pasture at the present time and had a covering of short grass. Generally, the majority of extant field boundaries were of dry-stone walls.

4.2 RESULTS

- 4.2.1 The walk-over survey (Figs 3 and 4) identified a densely packed, archaeological resource, with 45 sites recorded along the short section east of Oddendale (Sites **35-79**). These were mostly post-medieval agrarian features, relating primarily to relict sections of the dry-stone walled post-medieval, enclosed field landscape. Features ranged from numerous relict sub-divisional boundary walls, localised, shallow quarry scoops, through to clearance cairns, the sites of two barns, several stock management features and watering places, two areas of narrow ridge and furrow cultivation and three access trackways. Many of the field systems related to a green lane (Site **53**; Plates 4 and 5) that extends for part of its route along a sunken gully, containing Dalebanks Beck, and links Oddendale and Crosby Ravensworth. The lane was partially replaced at a later date by a route following a more elevated and drier route to the north (Site **34**; Plate 6), which cuts across many of the early field boundaries. This latter lane is being followed by the line of the proposed pipe.
- 4.2.2 Prior to the establishment of the enclosed dry-stone walled fields the land to the east of Oddendale village was occupied by medieval open fields, which were edged to the south by the gully/green lane (Site **53**). Within this area is a complex of long, narrow strip cultivation ridges, which have an unmistakable pattern of reversed 'S'-(aratral) shaped lynchets. The current field boundary pattern reflects the fossilisation of some of these lynchets, as a result of the post-medieval enclosure of the open fields; however, a substantial number of the lynchets survive as earthworks in-between the present day boundaries (Plates 7 and 8). The survival of these earthworks in the southern part of the area reflects that here the fields have been in predominantly pastoral use, subsequent to the enclosure, and have been subject to relatively little ploughing. By contrast, the fields north of the farm track (Site **34**) have been intensively cultivated and many of the earthworks are largely ploughed out. The line of the farm track (Site **34**) that will be followed by the

pipeline, cuts through most of the medieval cultivation lynchets in the western part of this walk-over survey area, where they have been denuded, but on the eastern end the trackway is on top of and follows an undulating course up and over, the lynchets (Plate 9). Here the track has, to date, had only a superficial impact upon the earthworks.

- 4.2.3 The cultivation lynchets Sites **54** and **51** are crossed by a series of possible banks, that are orientated perpendicular to the line of the lynchets. These may potentially reflect earlier terracing, parallel to the course of the gully at the foot of the hill, but are perhaps more likely to be natural terraced shelves formed in the limestone bedrock. Within this section of field system is a small field byre (Site **56**), which is a low single celled rectilinear structure standing to 0.7m high (Plate 10). It was shown as an unroofed enclosure on the First Edition OS mapping.

5. SIGNIFICANCE OF THE REMAINS

5.1 INTRODUCTION

5.1.1 In total, 113 sites of archaeological interest were identified during the survey. Thirty-three of these sites were recorded in the Cumbria HER (Sites **01-33**), twenty-three sites were identified in the topographic survey and mitigation undertaken for the extension of Hardendale Quarry (LUAU 1996, Sites **91-113**), seven sites were recorded from the map regression (Sites **34, 80-82, 87** and **89-90**), five sites were recorded from consultation of aerial photographs (Sites **83-86** and **88**), and 45 sites were identified by the walk-over survey (Sites **35-79**). There is one Scheduled Monument within the study area (Site **05**), and three Grade II listed buildings (Sites **31-33**).

Period	No of Sites	Site Type
Neolithic-Bronze Age	6	Ring cairns (02 and 03), scraper findspot (29), Scheduled stone circle (05), waste flake finspot (112), unretouched flake finspot (113)
Possibly Prehistoric	2	Enclosure (01), Hardendale Stone (25)
Iron Age/Romano-British	1	Farmstead (09)
Possibly Medieval	8	Earthworks including ridge and furrow (10, 12, 14 and 15), field boundaries (60, 68, 71), holloway/track (62)
Medieval	9	Strip fields (45, 47-8, 51, 54, 64 and 72), lane (53), Oddendale settlement (79)
Post-medieval	69	Quarry/earthworks (16), quarries (18, 19, 20, 21, 23, 24, 26, 30, 36-7, 44, 65-7, 78, 82, 91-95, 97-100 and 103-108), quarry/platform (55), quarry/enclosure (63), lime kilns (27 and 28) Grade II Listed Buildings (31, 32 and 33), tracks (34 and 50), stone circle (04), former field boundaries (38-40, 43, 46, 61, 70, 77 and 85-6), ruined barn (41), springs (42 and 69), barn/byre (56), clearance cairn (57), ridge and furrow (58 and 75), smoot (59), gates (73-4), sheep shelter (76), barn (80), road (87), trackway (96 and 109), farmstead (89), well (90)
Unknown	18	Field system (11), Thunder Stones (22 and 81), lynchets (06), possible settlement sites (07 and 08), trackways (13), pit and enclosure (17), clearance cairn (35), spring (49), platform (52), holloways (83-4 and 88), area of disturbance (101 and 102), mound (110), excavated staked structure (111)

Table 2: Number of sites by period

5.2 CRITERIA

5.2.1 There are several different methodologies that can be used to assess the archaeological significance of sites; that to be used here is the ‘Secretary of State’s criteria for scheduling ancient monuments’ which is included as Annex 4 of PPG 16 (DoE 1990). Of the 113 sites previously listed (Table 2), 21 were identified as being potentially impacted during the construction of the proposed pipeline (Sites **12, 15, 34, 45, 51, 53-4, 57-8, 64-6, 73, 76, 79, 83-8, 96** and **109**). These were each considered using the criteria defined below.

- 5.2.2 **Period:** the significance of a monument is in part determined by period, as typically the earlier periods are less well represented within the archaeological record; the early medieval period is also poorly represented and consequently would accord a high significance rating. Site **79** is the medieval settlement of Oddendale, through which the proposed pipeline is routed. A number of possible medieval earthworks are located on either side of the road through Oddendale, and the track to the east (Site **34** and Site **53**). Site **12** comprises earthworks and ridge and furrow to the north of Oddendale, and this is potentially medieval in date. Sites **45**, **51**, **54** and **64** are all part of the strip field system, aligned approximately north-west/south-east, to the north of the medieval outgang lane on the east side of Oddendale (Site **53**). This lane runs approximately parallel with, and south of the later lane (Site **34**), on which the pipeline is routed, except towards the eastern extent of the proposed pipeline route, where the two lanes merge. None of the other sites that will potentially be impacted on by the proposed pipeline are thought to be significant due to period.
- 5.2.3 **Rarity:** none of the sites is thought to be significant due to rarity.
- 5.2.4 **Documentation:** it is possible that further documentation is available for Oddendale, which may contain information as to the use of and features within the surrounding land.
- 5.2.5 **Group Value:** the medieval sites (Sites **79**, **12**, **53**, **45**, **51**, **54** and **64**) have a group value as together they contribute to an understanding of the settlement of Oddendale and its agricultural working of the surrounding land.
- 5.2.6 The holloways to the west of Oddendale (Sites **83-4**), and further north, to the east of Hardendale (Site **88**), have a group value as, although they are not closely dated, together they demonstrate that this area has been a well-established north/south route over hundreds and possibly thousands of years.
- 5.2.7 **Survival/Condition:** the route of the proposed pipeline is located on the route of the Shap to Wickerslack road (Site **87**), on the road to Oddendale and on post-medieval/medieval tracks to the east of Oddendale (Site **34** and Site **53**). A number of sites are crossed by these roads and tracks (Sites **12**, **15**, **45**, **51**, **54**, **58**, **64**, **83**, **84**, **85**, **86** and **88**) and, therefore, will potentially be impacted on by the pipeline. The below ground survival and condition of these sites is not known; however, as the roads through which the proposed pipeline is routed are very minor, and the track to the east of Oddendale is not metalled, it is thought that remains of these features may survive beneath the roads and track.
- 5.2.8 **Fragility/Vulnerability:** 23 sites have been identified as being potentially impacted upon by the proposed pipeline. A number of these include large areas, or are linear sites of which a small part would be impacted upon by the proposed pipeline. Other sites, such as the gateposts (Site **73**), the sheep shelter (Site **76**), and the clearance cairn (Site **57**), may be more substantially impacted.
- 5.2.9 **Diversity:** none of the sites is considered to be significant due to its diversity.
- 5.2.10 **Potential:** although none of the prehistoric sites identified in the study area are located directly on the route of the proposed pipeline, there are a number of significant prehistoric sites in the study area and wider landscape, which suggest the potential for other associated prehistoric remains to be located on the route of the proposed pipeline. These sites include the Bronze Age Scheduled stone circle at the north end of the route (Site **05**), a possible prehistoric enclosure in

Castlehouse Scar Plantation (Site **01**), and a Neolithic-Bronze Age ring cairn to the west of Oddendale (Site **02**).

5.3 SIGNIFICANCE

5.3.1 Table 3 shows the sensitivity of the site scaled in accordance with its relative importance using the following terms for the cultural heritage and archaeology issues, with guideline recommendations for a mitigation strategy.

Importance	Examples of Site Type	Negative Impact
National	Scheduled Monuments (SMs), Grade I, II* and II Listed Buildings	To be avoided
Regional/County	Conservation Areas, Registered Parks and Gardens (Statutory Designated Sites) Sites and Monuments Record/Historic Environment Record	Avoidance recommended
Local/Borough	Sites with a local or borough value or interest for cultural appreciation Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged
Low Local	Sites with a low local value or interest for cultural appreciation Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged
Negligible	Sites or features with no significant value or interest	Avoidance unnecessary

Table 3: Criteria used to determine Importance of Sites

5.3.2 Two of the sites (Sites **12** and **15**) that will potentially be impacted on by the proposed pipeline are included in the Cumbria Historic Environment Record, which suggests a regional or county-level significance. Eight of the sites have been assessed as of Local/Borough Significance (Sites **45**, **51**, **53-4**, **64**, **73**, **76** and **79**) and thirteen of the sites have been assessed as of low, local significance (Sites **34**, **57-8**, **65-6**, **83-8**, **96** and **109**). This is based on the current state of knowledge, though the subsequent discovery of additional features or evidence relating to these sites could alter their assessed levels of significance.

6. IMPACT ASSESSMENT

6.1 INTRODUCTION

6.1.1 In its Planning Policy Guidance *Note 16*, the Department of the Environment (DoE 1990) advises that archaeological remains are a continually diminishing resource and *'should be seen as finite, and non-renewable resource, in many cases, highly fragile and vulnerable to destruction. Appropriate management is therefore essential to ensure that they survive in good condition. In particular, care must be taken to ensure that archaeological remains are not needlessly or thoughtlessly destroyed'*. It has been the intention of this study to identify the archaeological potential of the study area, and assess the impact of development, thus allowing the advice of the DoE to be enacted upon. Assessment of impact has been achieved by the following method:

- assessing any potential impact and the significance of the effects arising from development;
- reviewing the evidence for past impacts that may have affected the archaeological sites; and
- outlining suitable mitigation measures, where possible at this stage, to avoid, reduce or remedy adverse archaeological impacts.

6.1.2 The impact is assessed in terms of the sensitivity or importance of the site to the magnitude of change or potential scale of impact during any future development scheme. The magnitude, or scale, of an impact is often difficult to define, but will be termed as substantial, moderate slight, or negligible, as shown in Table 4, below.

Scale of Impact	Description
Substantial	Significant change in environmental factors; Complete destruction of the site or feature; Change to the site or feature resulting in a fundamental change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Moderate	Significant change in environmental factors; Change to the site or feature resulting in an appreciable change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Slight	Change to the site or feature resulting in a small change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Negligible	Negligible change or no material changes to the site or feature. No real change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.

Table 4: Criteria used to determine Scale of Impact

6.1.3 The interaction of the scale of impact (Table 4) and the importance of the archaeological site (Table 3) produce the impact significance. This may be calculated by using the matrix shown in Table 5, below.

Resource Value (Importance)	Scale of Impact Upon Archaeological Site			
	Substantial	Moderate	Slight	Negligible
National	Major	Major	Intermediate/Minor	Neutral
Regional/County	Major	Major/Intermediate	Minor	Neutral
Local/Borough	Intermediate	Intermediate	Minor	Neutral
Local (low)	Intermediate / Minor	Minor	Minor/Neutral	Neutral
Negligible	Neutral	Neutral	Neutral	Neutral

Table 5: Impact Significance Matrix

6.1.4 The extent of any previous disturbance to buried archaeological levels is an important factor in assessing the potential impact of the proposed pipeline. The route of the pipeline is located on the route of the Shap to Wickerslack road, on the road to Oddendale and on a post-medieval track to the east of Oddendale. The Shap to Wickerslack road and the track to the east of Oddendale have been added to the gazetteer due to their antiquity (Site **87** and Site **34**); however, it is also possible that they have truncated earlier features which they cross (Sites **12**, **15**, **45**, **51**, **54**, **58**, **64**, **83**, **84**, **85**, **86** and **88**). The below ground survival and condition of these sites is not known but as the roads through which the proposed pipeline is routed are very minor, and the track to the east of Oddendale is not metalled, it is thought that remains of these features may survive beneath the roads and track.

6.2 IMPACT ASSESSMENT

6.2.1 Following on from the above considerations, the significance of effects has been determined based on an assumption that there will be earth-moving works associated with any future development, and a consideration of the present condition of the archaeological assets/sites. The results are summarised in Table 6, below, in the absence of mitigation.

Site Number	Nature of Impact	Importance	Scale of Impact	Impact Significance
12	Disturbance of features by groundworks	Regional or county	Slight	Minor
15	Disturbance of features by groundworks	Regional or county	Slight	Minor

Site Number	Nature of Impact	Importance	Scale of Impact	Impact Significance
34	Disturbance of features by groundworks	Low Local	Moderate	Minor
45	Disturbance of features by groundworks	Local/Borough	Slight	Minor
51	Disturbance of features by groundworks	Local/Borough	Slight	Minor
53	Disturbance of features by groundworks	Local/Borough	Moderate	Intermediate
54	Disturbance of features by groundworks	Local/Borough	Slight	Minor
57	Disturbance of features by groundworks	Low Local	Slight	Minor
58	Disturbance of features by groundworks	Low Local	Slight	Minor
64	Disturbance of features by groundworks	Local/Borough	Slight	Minor
65	Disturbance of features by groundworks	Low Local	Moderate	Minor
66	Disturbance of features by groundworks	Low Local	Moderate	Minor
73	Disturbance of features by groundworks	Local/Borough	Substantial	Intermediate
76	Disturbance of features by groundworks	Local/Borough	Moderate	Intermediate
79	Disturbance of features by groundworks	Local/Borough	Moderate	Intermediate
83	Disturbance of features by groundworks	Low Local	Slight	Minor
84	Disturbance of features by groundworks	Low Local	Slight	Minor
85	Disturbance of features by groundworks	Low Local	Slight	Minor

Site Number	Nature of Impact	Importance	Scale of Impact	Impact Significance
86	Disturbance of features by groundworks	Low Local	Slight	Minor
87	Disturbance of features by groundworks	Low Local	Moderate	Minor
88	Disturbance of features by groundworks	Low Local	Slight	Minor
96	Disturbance of features by groundworks	Low Local	Slight	Minor
109	Disturbance of features by groundworks	Low Local	Slight	Minor

Table 6: Assessment of the impact significance on each site during development

7. RECOMMENDATIONS FOR ARCHAEOLOGICAL MITIGATION

7.1 INTRODUCTION

- 7.1.1 In terms of the requirement for further archaeological work, it is necessary to consider only those sites that will be affected by the proposed pipeline works. Current legislation draws a distinction between archaeological remains of national importance, and other remains considered to be of lesser significance. Those perceived to be of national importance may require preservation *in-situ*, whilst those of lesser significance may undergo preservation by record, where high local or regional significance can be demonstrated. All the sites identified as being above minor potential impact on the route are of local/borough significance.

7.2 RECOMMENDATIONS

- 7.2.1 If the route is varied away from the presently proposed line of the pipeline then a walk-over survey should be undertaken on the new route line. It is also recommended that a topographic survey be undertaken, prior to the commencement of construction works, for those earthwork sites that are on the route of the proposed pipeline section to the east of Oddendale (Sites **12**, **15**, **45**, **51**, **54**, **58**, **64**, **83**, **84** and **88**). This survey would be within a corridor, up to 100m wide, on either side of the pipeline and would serve to provide a context for any features revealed within the proposed pipeline trench.
- 7.2.2 Due to the presence of a number of sites adjacent or extending across the remainder of the route and the high potential for further, as yet unknown remains, it is also suggested that a permanent presence watching brief be undertaken for the entire length of the easement. This reflects that it is not known to what extent the pipe will cut through the road foundations into undisturbed deposits. If sections of the road foundations are demonstrably deeper than the cut of the pipeline, then the watching brief will not be necessary in these areas.
- 7.2.3 In addition, two areas of the proposed pipeline route are considered to be of high archaeological potential, and require further archaeological mitigation. The first is the area to the north and east of Castlehowe stone circle (Site **05**) and the area west of the potential prehistoric enclosure (Site **01**). Again if the road foundations are confirmed as being deeper than the cut of the pipe, then further mitigation in this area will not be necessary. The second area is to the east of Oddendale, where the proposed pipeline crosses Sites **54** and **64**, an area of well-preserved medieval strip lynchet field system. In these areas it is recommended that the groundworks for the pipeline are carried out in an archaeologically controlled manner. This would require an archaeologist to supervise the level to which the ground is initially stripped and be allowed time to hand excavate and record any features revealed in the strip. In the section east of Oddendale, it is recommended that the topsoil strip be kept to the minimum width so as to minimise the impact on the earthworks.
- 7.2.4 The scope and specification of any archaeological mitigation required in advance of the proposed works would be subject to consultation with the Assistant Archaeologist, Cumbria County Council.

Site Number	Significance	Impact Significance	Recommendations
12	Regional or county	Minor	Topographic Survey and Watching Brief
15	Regional or county	Minor	Topographic Survey and Watching Brief
34	Low Local	Minor	Watching Brief
45	Local/Borough	Minor	Topographic Survey and Watching Brief
51	Local/Borough	Minor	Topographic Survey and Watching Brief
53	Local/Borough	Intermediate	Watching Brief
54	Local/Borough	Minor	Topographic Survey and Watching Brief
57	Low Local	Minor	Watching Brief
58	Low Local	Minor	Topographic Survey and Watching Brief
64	Local/Borough	Intermediate	Topographic Survey and Watching Brief
65	Low Local	Minor	Watching Brief
66	Low Local	Minor	Watching Brief
73	Local/Borough	Intermediate	Watching Brief
76	Local/Borough	Intermediate	Watching Brief
79	Local/Borough	Intermediate	Watching Brief
83	Low Local	Minor	Topographic Survey and Watching Brief
84	Low Local	Minor	Topographic Survey and Watching Brief
85	Low Local	Minor	Watching Brief
86	Low Local	Minor	Watching Brief
87	Low Local	Minor	Watching Brief
88	Low Local	Minor	Topographic Survey and Watching Brief
96	Low Local	Minor	Watching Brief
109	Low Local	Minor	Watching Brief

Table 7: Summary of site-specific recommendations for further archaeological investigation and mitigation

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 APPENDIX 1: GAZETTEER OF SITES

Site number 01
Site Name Castlehouse Enclosure, Scar Plantation, Crosby Ravensworth
NGR 358890 515400
HER no 1549
Site Type Enclosure
Period Unknown
Source HER
Description An enclosure, noted from historic maps, in Scar Plantation, two miles west-north-west of Crosby Ravensworth Church. The enclosure is of rhomboidal form, *c* 35ft x 27ft. The foundations incorporate some larger boulders. This site was visited during the walk-over survey in November 2008, and was found to have been largely destroyed by quarrying.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 02
Site Name Oddendale Ring Cairn, Crosby Ravensworth
NGR 359000 513600
HER no 1572
Site Type Ring Cairn
Period Neolithic-Bronze Age
Source HER; Turnbull and Walsh 1997
Description The site was originally recorded as an enclosure by the Royal Commission on the Historical Monuments of England (RCHME). Excavations in September 1990 proved the site to be of considerable importance, with three phases of activity, the earliest being of a Late Neolithic date. Phase I was represented by two roughly concentric circles of massive post pits, dug to house the upright timbers of a major ceremonial monument. The only finds were animal bone and charcoal. In Phase II, some time during the Early Bronze Age, a ring cairn of boulders was built on the site, the bank overlying the inner circle of the timber monument. Finds included isolated sherds of pottery and bone. In a shallow central grave a few finds of AOC Beaker were recorded and a few sherds of fabric resembling Peterborough Ware were also found under the cairn. During Phase III two platforms of boulders were attached to its outer edge. It appears these platforms served for excarnation, during an early stage of the mortuary process. This is possibly the same as Site 03.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 03
Site Name Oddendale Ring Cairn
NGR 359030 513520
HER no 1573
Site Type Ring Cairn
Period Bronze Age
Source HER, LUAU 1996
Description A mound, 13.5m in diameter, has a dished centre. This was not located in 1992 when the site was visited in 1992 by Ken Robinson of English Heritage in connection with the Monument Protection Programme (MPP). No surface evidence was found for the site at this grid reference, or in the vicinity, during the field inspection or during the subsequent topographic survey (LUAU 1996). It would appear that the site may have been destroyed when Hardendale Quarry was extended. This is possibly the same as Site 02.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 04
Site Name Oddendale Stone Circle
NGR 359300 513340

HER no	1575
Site Type	Stone Circle
Period	Unknown
Source	HER
Description	A small circle of stones, on a gentle east-facing slope and three contiguous stones lie at the centre. Although conspicuous, the site was unrecorded by RCHME. The farmer states the site was there in 1940 when he bought the farm. The site was visited in connection with the MPP for possible scheduling. In view of the questionable origins of the monument, with the weight of evidence suggesting the site is of recent date, it was decided not to schedule it. This site was visited during the walk-over survey in November 2008, and a conversation with the farmer suggested it had been constructed relatively recently.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	05
Site Name	Castlehowe Scar Stone Circle, Shap Rural
NGR	358750 515470
HER no	1584
Site Type	Stone Circle
Period	Bronze Age
Statutory Designation	Scheduled Monument 22451
Source	HER
Description	A small stone circle, with a diameter of <i>c</i> 5m, consisting of 11 variably spaced boulders. Of these, 10 are rounded pink granite and one is hewn blue granite; it is unclear which are standing <i>in situ</i> and which may have fallen. The two largest stones are at the southern side of the circle. The westerly of these is the blue granite stone, which has fallen. There are many mole hills, and also soil erosion beneath the boulders which may cause some stones to fall further (AM County Index). The stone circle is located 220m south-east of Castlehowe Scar Farm, on the parish boundary between Shap Rural/Crosby Ravensworth. The monument is not known to have been excavated. It does not extend south of the field boundary. This monument survives well and is a good example of its type.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	06
Site Name	Crosby Ravensworth Lynchets
NGR	360300 513790
HER no	1712
Site Type	Lynchets
Period	Unknown
Source	HER
Description	Lynchets are visible on RAF aerial photographs. During a site visit by the SMR, a low earthen bank was visible at NY 6020 1385 running in a south-west/north-easterly direction and there appeared to be others running in the same direction. There are also lynchets in the field directly to the south (part of SMR 3529 (Site 08)).
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	07
Site Name	Dalebanks Settlement, Crosby Ravensworth
NGR	360100 513800
HER no	3528
Site Type	Settlement
Period	Unknown
Source	HER
Description	A settlement at Dalebanks of unknown date. This appears to be part of the site complex, SMR 3896 (Site 09), although the grid reference given is slightly to the side of that site. According to P. Turnbull who visited the site in early spring 1992, it is badly preserved and fragmentary, consisting of low, somewhat ambiguous earthworks which were vague

and hard to locate. A site visit by the SMR did not identify any features, although the site was under grass at the time.

Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 08
Site Name Dalebanks Settlement, Crosby Ravensworth
NGR 360300 513600
HER no 3529
Site Type Settlement
Period Unknown
Source HER
Description This is Dalebanks II - a possible settlement site on a spur. There is nothing visible on RAF aerial photographs from 1954. During a site visit by the SMR, the field had new mown grass lying on it and could not be fully assessed. At the north end is a possible platform which appears to relate to a grass-covered bank which continues in a reversed 'L'-shape, and cuts the corner of the northern adjacent field. There are also lynchets running in an approximate north/south direction. See also SMR 1712 (Site 06).
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 09
Site Name Crosby Ravensworth Farmstead
NGR 360250 514050
HER no 3896
Site Type Farmstead
Period Iron Age - Romano-British
Source HER
Description During a site visit by the SMR, the main part of the site was covered in rough grass, and surrounding fields were in the process of being mown. Earthwork features were visible and suggest a series of enclosures or compartments situated on high ground above Dalebanks Beck. The features extend out into surrounding fields. There is a very deep holloway, which appears to extend from the settlement down to the beck. Just above the beck the earthwork features end in massive banks at NY 604 137, where they join what appears to be an ancient track (Site 34) to Oddendale/Crosby Ravensworth. In places this track is lined with massive Shap Granite boulders, many of which are still standing.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 10
Site Name Castle Howe Scar Enclosure and Ridge and Furrow, Shap Rural
NGR 358300 515300
HER no 4971
Site Type Ridge and Furrow and enclosure
Period Unknown
Source HER
Description A series of possible enclosures appearing on aerial photographs, and there is also pronounced straight/narrow ridge and furrow. There is a possible earthwork feature at NY 5842 1536.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 11
Site Name Trainrigg Celtic Field System
NGR 358200 515800
HER no 5764
Site Type Field System
Period Unknown
Source HER

Description	A fairly extensive 'Celtic field system', north-east of Trainrigg, discovered by British Gas when laying a pipeline in 1982. The site has been bisected by the pipeline.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	12
Site Name	Oddendale Ridge and Furrow, Earthworks, Crosby Ravensworth
NGR	359500 513700
HER no	6198
Site Type	Ridge and Furrow and earthworks
Period	Unknown
Source	HER
Description	Earthworks, including ridge and furrow, around Oddendale village.
Assessment	The site lies within the proposed pipeline route and may be affected by the works.

Site number	13
Site Name	Oddendale Trackways
NGR	359500 513200
HER no	6202
Site Type	Trackway
Period	Unknown
Source	HER
Description	Trackways, to south of Oddendale.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	14
Site Name	Oddendale Earthworks, Crosby Ravensworth
NGR	360000 513500
HER no	6203
Site Type	Earthworks
Period	Unknown
Source	HER
Description	Earthworks east of Oddendale. Ridge and furrow, plus earthworks including bank and ditch, and banks which are directly associated with ridge and furrow.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	15
Site Name	Oddendale Ridge and Furrow
NGR	359500 514200
HER no	6204
Site Type	Ridge and Furrow
Period	Unknown
Source	HER
Description	An aerial photograph shows an extended pattern of ridge and furrow, respecting modern walls to the west and on the south-east. The eastern boundary has a 'dog-leg' at which point the line is continued by older bank.
Assessment	The site lies within the proposed pipeline route and may be affected by the works.

Site number	16
Site Name	Hardendale Limestone Quarry Extension Earthworks
NGR	358800 514300
HER no	6843
Site Type	Earthworks
Period	Post-medieval
Source	HER

Description	North of the present quarry workings, are various earthworks which appear to be post-medieval in origin. They include a field system in the shape of a broad drove-way, aligned roughly north-east/south-west, flanked on either side by blocks of fields defined by dry-stone dykes. The south end of this drove-way has now been lost to the quarry. The surviving dykes are broadly of the same construction, built of thin slabs of limestone with the occasional boulder of pink granite. This essentially rectilinear intake may suggest origins in the early enclosure and colonisation of this area of moorland. Two small structures are built into the wall system and appear contemporary. One is a small hut, 2m square, which appears to be a shepherd's bothy. The second structure appears to be a sheepfold. There are also two probable stackstands, about 3m in diameter, and traces of ridge and furrow, which appear to relate to the present wall system.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	17
Site Name	Shap Rural, Hardendale Enclosure, Pit
NGR	357900 515500
HER no	13760
Site Type	Enclosure and pit
Period	Unknown
Source	HER
Description	An enclosure and pits shown on aerial photographs. An evaluation undertaken by LUAU in 1990 (Lambert 1996) revealed a pit and linear bank, but these features could not be dated.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	18
Site Name	Castlehowe Scar Quarry, Crosby Ravensworth
NGR	358900 515630
HER no	14669
Site Type	Quarry
Period	Post-medieval
Source	HER
Description	Quarry 370m north-east of Castlehowe Scar, and shown on the OS Second Edition 25" Sheet XIV, II.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	19
Site Name	Quarry 240m North East of Castlehowe Scar, Crosby Ravensworth
NGR	358740 515700
HER no	14670
Site Type	Quarry
Period	Post-medieval
Source	HER
Description	Castlehowe Scar North-East Quarry is shown on the OS Second Edition 25" Sheet XIV, II (1913).
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	20
Site Name	Castlehowe Scar Quarry, Crosby Ravensworth
NGR	358695 515670
HER no	14671
Site Type	Quarry
Period	Post-medieval
Source	HER
Description	A quarry, shown on the OS Second Edition 25" Sheet XIV, II (1913)
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 21
Site Name Thunder Stone Quarries East, Shap Rural
NGR 358150 515500
HER no 14676
Site Type Quarry
Period Post-medieval
Source HER
Description A quarry, shown on the OS Second Edition 25" Sheet XIV, II (1913)
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 22
Site Name Thunder Stones East, Shap Rural
NGR 358169 515607
HER no 14677
Site Type Stone
Period Unknown
Source HER
Description Thunder Stones East. There are four Thunder Stones in Shap parish, two being near the parish boundary (Site 22 to the west and Site 81 to the east), the other two are west of Shap, in fields near Abbey Wood. There are also three Thunder Stones in Orton Parish, and several others in Westmorland. Some are boundary stones.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 23
Site Name Scar Plantation Quarries, Crosby Ravensworth
NGR 358970 515460
HER no 14748
Site Type Quarry
Period Post-medieval
Source HER
Description Scar Plantation Quarries: Two late nineteenth century quarries within the plantation are described as 'old' on the OS Second Edition map (1899). There is another later quarry south of these two, described only on the OS 1:10,000 edition.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 24
Site Name Castlehowe Quarry, Crosby Ravensworth
NGR 358770 515520
HER no 14749
Site Type Quarry
Period Post-medieval
Source HER
Description This is Castlehowe Scar Stone Circle Quarry, adjacent to Stone Circle, SMR 1584 (Site 05).
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 25
Site Name Hardendale Stone, Shap Rural
NGR 358750 514980
HER no 14766
Site Type Stone
Period Prehistoric
Source HER
Description Hardendale Stone was apparently removed after the second edition was surveyed, as it not shown on the 1913 25" or 1919-20 6" maps.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	26
Site Name	Grandy and Oddendale Quarries, Crosby Ravensworth
NGR	359500 514100
HER no	14767
Site Type	Quarry
Period	Post-medieval
Source	HER, LUAU 1996
Description	<p>Grandy and Oddendale Quarries are a group of disused quarries north of Oddendale. Also included are quarries at:</p> <p>359235 513905 - 359215 513780 (c 0.25 Ha incl. a lime kiln - see SMR 14768 (Site 27)); 359500 513885 - 359535 513910 (c 0.1 Ha).</p> <p>Quarries on Lowther Common Land:</p> <p>359100 514450 - 359120 514320 (c 0.3 Ha); 359690 514360 - 359675 514305 (c 0.15 Ha); 359705 514300 - 359750 514280 (c 0.17 Ha); 359715 514260 - 359860 514350 (c 0.50 Ha); 359900 514360 - 359930 514360 (c 0.10 Ha); 359140 513950 - 359170 513950 (c 0.15 Ha); 359085 513685 - 359180 513530 (c 1.00 Ha - Grandy Quarries).</p>
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	27
Site Name	Oddendale Quarries Lime Kiln, Crosby Ravensworth
NGR	359230 513850
HER no	14768
Site Type	Lime Kiln
Period	Post-medieval
Source	HER, LUAU 1996
Description	<p>Oddendale Quarries lime kiln is situated at a quarry north of Oddendale (see also SMR 14767 (Site 26)). A lime kiln built into a west facing limestone scarp, which has been subject to quarrying. The structure was made of blocks and slabs of stone, which have been affected by heat. The kiln (which stood over 3m high) is now largely destroyed and the bowl of the kiln filled by collapsed masonry and debris. Only some of the structure built against the exposed limestone face survives and can still be seen. There is little surface evidence at the top of the scarp by the charge hole other than a smooth slightly raised apron.</p> <p>At the base of the kiln a trackway leads westward, away from the stoke hole. The track was c2.50m wide and sunken (up to 1m deep) adjacent to the kiln. It was not clear how far the track had been cut (or eroded) into the natural deposits and to what extent the surrounding ground level had been built up through spoil being dumped from the quarrying / production of lime. The kiln and trackways in the area were depicted on the first edition Ordnance Survey map (1863).</p> <p>The site was destroyed by the extension of the Hardendale Quarry.</p>
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	28
Site Name	Oddendale Lime Kiln West, Crosby Ravensworth
NGR	359240 513390
HER no	14769
Site Type	Lime Kiln
Period	Post-medieval
Source	HER
Description	A lime kiln was situated at the west entry to the village on the edge of Lowther Common Land.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	29
Site Name	End Scraper Find, Oddendale, Crosby Ravensworth
NGR	359650 513200
HER no	16759
Site Type	Findspot
Period	Prehistoric
Source	HER
Description	A short, finely-made end scraper of honey-coloured flint, that is steeply retouched. It was found during field survey in May 1992 by the Cherrys. It is in the Cherry/Elwood flint collection.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	30
Site Name	Castlehouse Scar Quarry, Crosby Ravensworth
NGR	359100 515100
HER no	16800
Site Type	Quarry
Period	Unknown
Source	HER
Description	The site of a disused quarry near Castlehouse Scar.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	31
Site Name	Oddendale (middle house in settlement) with adjoining barns
NGR	359403 513452
HER no	23681
Site Type	Building
Period	Post-medieval
Statutory Designation	Grade II Listed Building
Source	HER
Description	House and barns of 1776 date, with initials T. G. on door lintel. A barn to right was added, probably in the early/mid-nineteenth century. It is coursed, squared rubble with quoins and the house is wet-dashed. It has a graduated slate roof. It is built on a sloping site. It has two storeys, five bays (2:3:1) overall. Part-glazed door in plain surround; one 3-light and one 2-light window to right on each floor, all square-leaded in plain surrounds with flat mullions. The left-hand ramp barn has a plank byre door with vent slits and a plank loft door above; there is a wagon entrance to rear. Right-hand barn has fixed window to ground floor and a segment-headed wagon entrance to rear with loft access above. There is a stone end chimney to house.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	32
Site Name	Oddendale Hall (eastern house in settlement) with adjoining byre
NGR	359470 513430
HER no	23680
Site Type	Building
Period	Post-medieval
Statutory Designation	Grade II Listed Building
Source	HER
Description	A house, probably late seventeenth century with early eighteenth century additions. It has a 1677 date on lintel re-used in barn to north and a 1726 date on a threshing barn to the south. It also has nineteenth century additions and alterations. It comprises coursed, squared rubble with quoins; and the house is pebble-dashed. Graduated slate roof. Two storeys: five bays overall. Present front eighteenth century with seventeenth century wing

to rear; house extended to left (with wing to rear) and loser byre added to right in nineteenth century. Plank door in nineteenth century gabled porch with side benches. 3-light window and fire window to right, sash to left, and two 3-light windows above; multi-light windows are square-leaded in chamfered surrounds with flat stone mullions. Nineteenth century bay has sash to ground floor and two casements above. Byre has plank door in shouldered surround with casement to each floor on left; steps up to plank loft door in return. It has stone mid and end chimneys.

Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	33
Site Name	Oddendale Old Hall (western house in settlement) with adjoining cart-shed
NGR	35937 513418
HER no	23682
Site Type	Building
Period	Post-medieval
Statutory Designation	Grade II Listed Building
Source	HER
Description	A large house with adjoining cart-shed. It is of seventeenth century date with eighteenth century alterations and a bay added to the right in the nineteenth century. Wet-dashed rubble, with quoins, on boulder plinth. Graduated slate roof. It has two storeys, seven bays overall. It has a plank door in stone, and a gabled porch with bench. Three multi-light windows and fire window to left, pivoted window to right; three multi-light windows and casement above. It has multi-light windows of various dates, mostly in plain surrounds with flat mullions; some chamfered surrounds and mullions. Two windows to ground floor left under hoodmoulds with labels. All the windows, except the right-hand bay, are square-leaded. The left hand bay has an outshut with a plank side door; segment-headed cart entrance to rear. Seventeenth century corniced and stepped stone chimney to left, nineteenth century stone chimney to right, and brick mid chimney. Interior: Inglenook fireplace with cupboard to side in room on ground floor left; plank and muntin partition opposite in same room incorporates court cupboard and plate rack with splat supports (similar plank and muntin partition in room above). Seventeenth century and eighteenth century panelled doors; stop-chamfered beams throughout.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	34
Site Name	Oddendale to Crosby Ravensworth, Trackway I
NGR	359499 513456 to 360141 513635
HER no	-
Site Type	Track
Period	Post-medieval
Source	Map regression
Description	A trackway from Oddendale to Crosby Ravensworth, shown on the Crosby Ravensworth tithes of 1845. A parallel track runs to its south (Site 53) and joins the higher track to the west of High Dalebanks farm, this latter track is likely to be much earlier and is possibly medieval in origin. The current surviving track cuts laterally in an east-south-east/west-north-west direction across a relict landscape of medieval strip fields located on the eastern side of Oddendale village (Sites 45 , 47 , 48 , 51 , 54 and 64) and across post-medieval enclosed fields which are superimposed across the earlier cultivation. The trackway is clearly late in date. It consists of a flat grass-covered surface which is raised on the downslope (south) side where stone kerbing is exposed flush with the ground. It measures approximately 615m long by up to 5m-6m wide and is a maximum of 0.2m high
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	35
Site Name	High Dalebanks, Clearance Cairn
NGR	360379 513627

HER no	-
Site Type	Clearance Cairn
Period	Unknown
Source	OA North Walk-over Survey
Description	A moderately sized sub-circular clearance cairn on the edge of the top of a steep gully. It is probably associated with field clearance or wall construction although it may have had an earlier function. It measures approximately 6m in diameter by up to 0.25m high and consists of small angular limestone fragments.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	36
Site Name	High Dalebanks, Quarry I
NGR	360363 513616
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	OA North Walk-over Survey
Description	A small rectangular quarry scoop located in the bottom of a steep gully. It measures c 4m long by 2m wide and is up to 0.75m deep. It has been cut out of the shelving limestone outcrop in the gully and was probably associated with boundary construction.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	37
Site Name	High Dalebanks, Quarry II
NGR	360333 513624
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	OA North Walk-over Survey
Description	A small sub-rectangular quarry scoop adjacent to the south side of a relict boundary bank (Site 38). It measures c 3m long by 2m wide and is up to 0.5m deep. It was probably associated with boundary construction.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	38
Site Name	High Dalebanks, Field Boundary I
NGR	360303 513618
HER no	-
Site Type	Boundary Bank
Period	Post-medieval
Source	OA North Walk-over Survey
Description	A sinuous relict post-medieval field boundary bank, not shown on any of the historic mapping. It is located on the top of the south side of the steep gully to the west of High Dalebank Farm. It measures c 123m long by up to 2m wide and 0.3m high.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	39
Site Name	High Dalebanks, Field Boundary II
NGR	360300 513590
HER no	-
Site Type	Boundary Bank
Period	Post-medieval
Source	OA North Walk-over Survey
Description	A curvilinear relict field boundary bank, that is not shown on any of the historic mapping. It junctions onto the south side of a similar bank (Site 38) in order to partition a field. It measures c 55m long by up to 2m wide and 0.25m high.

Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 40
Site Name Slacks, Field Boundary I
NGR 360246 513546
HER no -
Site Type Boundary Bank
Period Post-medieval
Source Map regression, OA North Walk-over Survey
Description A curvilinear relict field boundary bank located to the north of slacks farm and shown on the First Edition OS mapping (1863). It consists of an earthen bank with some wall footings/orthostatic stones surviving and several collapsing veteran trees along its length. It measures approximately 90m long by up to 3m wide and 0.4m high.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 41
Site Name Slacks, Barn/Byre
NGR 360152 513531
HER no -
Site Type Barn/Byre
Period Post-medieval
Source Map regression, OA North Walk-over Survey
Description A ruinous two celled barn/byre structure located to the north-west of Slacks Farm and shown as a roofed structure straddling a boundary wall on the First Edition OS mapping. It is a rectangular two storey structure measuring 9m long by 5m wide and it survives up to first floor level on the gable ends. There is a small wall light on the north side and the entrance was possibly on the south, although this is masked by collapsed walling. A large tree is growing out of the centre of the structure.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 42
Site Name Slacks, Spring
NGR 360130 513527
HER no -
Site Type Spring
Period Post-medieval
Source OA North Walk-over Survey
Description A small kerbed spring or drain located to the north-west of Slacks Farm. It consists of three limestone slabs, surrounding the outpouring water, and overall it measures up to 1m square by up to 0.1m high.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 43
Site Name Slacks, Field Boundary II
NGR 360121 513582
HER no -
Site Type Boundary Wall
Period Post-medieval
Source Map regression, OA North Walk-over Survey
Description A ruinous linear boundary wall/lynchet located to the north-west of Slack Farm and shown on the First Edition OS mapping. The wall is raised above the field to the south on a bank or natural limestone shelving. The wall collapse consists of wall material and orthostatic foundation stones which measures up to 151m long by 3m wide and is up to 1m high (with lynchet).
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 44
Site Name Slacks, Quarry I
NGR 360154 513604
HER no -
Site Type Quarry
Period Post-medieval
Source OA North Walk-over Survey
Description A semi-circular quarry scoop measuring approximately 5m long by 4m wide and up to 1m deep.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 45
Site Name Slacks, Strip Lynchet Field system I
NGR 360249 513732
HER no -
Site Type Strip Fields
Period Medieval
Source Map regression, OA North Walk-over Survey
Description A relict section of medieval strip lynchet field-system, that is part of an almost complete surviving pattern of such fields between Oddendale and Crosby Ravensworth. It is orientated roughly north-west/south-east and runs downward towards a gully. It is partially shown in the pattern of the current enclosed field system and follows a classic medieval aratral reversed 'S'-shaped pattern. The strip lynchets survive in the western half of the current field, although they are denuded; slight ridge and furrow cultivation, measuring up to 4m-5m wide between ridges can also be seen in places.
Assessment The site lies within the proposed pipeline route and will be affected by the works.

Site number 46
Site Name Slacks, Field Boundary III
NGR 360275 513637
HER no -
Site Type Boundary Wall
Period Post-medieval
Source Map regression, OA North Walk-over Survey
Description A relict linear field boundary wall located to the north of Slacks Farm. It runs along the top break of slope above the north side of a steep gully and is shown on the First Edition OS mapping. It survives as some collapsed stone foundations and veteran trees poking out of the steep slope, and measures up to 143m long.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 47
Site Name High Dalebanks, Strip Lynchet Field system I
NGR 360379 513765
HER no -
Site Type Strip Fields
Period Medieval
Source Map regression, OA North Walk-over Survey
Description A relict section of medieval strip lynchet field-system, which is part of an almost complete surviving pattern of such fields between Oddendale and Crosby Ravensworth. It is orientated roughly north-west/south-east and runs downward towards a gully. It is partially shown in the pattern of the current enclosed field system and follows a classic medieval aratral reversed 'S'-shaped pattern. The strip lynchets survive well although they are denuded at the southern end, and slight ridge and furrow cultivation, measuring up to 4m-5m wide between ridges can be seen in places. The system is crossed laterally by a green lane which is clearly later in date (Site 53).

Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 48
Site Name High Dalebanks, Strip Lynchet Field system II
NGR 360447 513712
HER no -
Site Type Strip Fields
Period Medieval
Source Map regression, OA North Walk-over Survey
Description A relict section of medieval strip lynchet field-system, part of an almost complete surviving pattern of such fields between Oddendale and Crosby Ravensworth. It is orientated roughly north-west/south-east and runs downward towards a gully. It is partially shown in the pattern of the current enclosed field system and follows a classic medieval aratral reversed 'S'-shaped pattern. The lynchets survive particularly well in this field and are up to a massive 10m wide and 2m high in places. Slight ridge and furrow cultivation, measuring up to 4m-5m wide between ridges can be seen in places. The system is crossed laterally by a green lane which is clearly later in date (Site 53, Plates 4 and 5).
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 49
Site Name High Dalebanks, Spring
NGR 360484 513660
HER no -
Site Type Spring
Period Unknown
Source OA North Walk-over Survey
Description A sunken semi-circular area with an outpouring spring located in the south-west corner of a field to the west of High Dalebanks Farm. It measures up to 10m in diameter by 0.4m deep.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 50
Site Name High Dalebank to Slacks, Trackway
NGR 360462 513643
HER no -
Site Type Trackway
Period Post-medieval
Source Map regression, OA North Walk-over Survey
Description A semi-circular quarry scoop and rutted and sunken trackway located in the south of a field to the west of High Dalebanks Farm. It is partially shown on the First Edition OS mapping as a trackway running across a ford in the stream and between the farms at High Dalebanks and Slacks/Lane Head. The overall area measures up to 40m long by 10m wide and is cut into the limestone by up to 0.7m deep.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 51
Site Name Slacks, Strip Lynchet Field system II
NGR 360074 513598
HER no -
Site Type Strip Fields
Period Medieval
Source Map regression, OA North Walk-over Survey
Description A relict section of medieval strip lynchet field-system, which is part of an almost complete surviving pattern of such fields between Oddendale and Crosby Ravensworth. It is orientated roughly north-west/south-east and runs downward towards a gully. It is

partially shown in the pattern of the current enclosed field system and follows a classic medieval aratral reversed 'S'-shaped pattern. The lynchets survive in the eastern side of the field crossed by the proposed pipeline and measure up to 3m wide and 0.5m high and there is also slight ridge and furrow cultivation, measuring up to 4-5m wide between ridges, in places. The system is cut into three laterally, with the northern third ploughed almost flat, the centre surviving quite well although it is cut by both a trackway (Site 34) and a green lane (Site 53), and a curvilinear southern section at the foot of the gully.

Assessment The site lies within the proposed pipeline route and will be affected by the works.

Site number 52
Site Name Slacks, Platform
NGR 360102 513582
HER no -
Site Type Platform
Period Unknown
Source OA North Walk-over Survey
Description A flat rectangular platform sat on the northern side of a green lane (Site 53), and within a relict field-system (Site 51). It measures c 19m long by 4m wide and is slightly scooped into the hillside. The site may have been the platform for a structure, although it could alternatively be natural terracing of the limestone geology.

Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 53
Site Name Oddendale to Crosby Ravensworth, Green Lane
NGR 359473 513394 to 360611 513,782
HER no -
Site Type Outgang Lane
Period Medieval
Source Map regression, OA North Walk-over Survey
Description An irregular-shaped walled green lane running between Oddendale and Crosby Ravensworth. This section runs for c 1.3km from the medieval core of Oddendale (Site 79) before leaving the study area on the western side of High Dalebanks Farm. On the western end it runs into the bottom of a dry stream bed and is walled on both sides, as it runs east there are sections of relict wall and hedges (Plate 4). The lane junctions with a later trackway in the centre of its length and in the east of its length it survives a deeply sunken narrow lane which is kerbed by large earthfast granite boulders (Plate 5). Where the lane is sunken it clearly cuts through some large strip lynchets (Site 48) which are almost certainly of medieval date. The lane may consist of the first connecting lane between the villages post-enclosure of the field-systems, which was then superseded by the later trackway (Site 34) on higher less waterlogged ground.

Assessment Part of the site lies within the proposed pipeline route and will be affected by the works.

Site number 54
Site Name Lane Head, Strip Lynchet Field system I
NGR 359955 513598
HER no -
Site Type Strip Fields
Period Medieval
Source Map regression, OA North Walk-over Survey
Description A relict section of medieval strip lynchet field-system, part of an almost complete surviving pattern of such fields between Oddendale and Crosby Ravensworth. It is orientated roughly north-west/south-east and runs downward towards a gully. It is partially shown in the pattern of the current enclosed field system and follows a classic medieval aratral reversed 'S'-shaped pattern. The lynchets survive in the entire of the field crossed by the proposed pipeline and can be seen slightly in the field to the north which has been ploughed almost flat. The lynchets measure up to 3m wide and 0.3m high and slight ridge and furrow cultivation, measuring up to 4-5m wide between ridges, can be

seen in places. The system is cut into three laterally, with the northern third ploughed almost flat, the centre surviving quite well, although it is cut by both a trackway (Site 34) and a green lane (Site 53), and a small southern section at the foot of the gully. There are possible banks running perpendicular to the line of the lynchets which may reflect earlier terracing running parallel to the course of the gully at the foot of the hill. It is more likely that these are, however, natural terraced shelves formed in the limestone bedrock.

Assessment The site lies within the proposed pipeline route and will be affected by the works.

Site number 55
Site Name Lane Head, Quarry/Platform
NGR 360015 513547
HER no -
Site Type Quarry/Platform
Period Post-medieval
Source OA North Walk-over Survey
Description A series of two quarry scoops and adjacent rectangular platforms located in the south-eastern part of a field to the north-west of Lane Head Farm. The site measures up to 13m long by 10m wide overall and is probably entirely associated with quarrying.

Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 56
Site Name Lane Head, Barn/Byre
NGR 359951 513541
HER no -
Site Type Barn/Byre
Period Post-medieval
Source Map regression, OA North Walk-over Survey
Description A ruinous rectangular structure located in a field to the north-west of Lane Head Farm. It is shown as an unroofed enclosure on the First Edition OS mapping. It survives as a low single-celled, walled area measuring up to 10.5m long by 7m wide and with walls of cleared stones up to 1.2m wide and 0.7m high.

Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 57
Site Name Lane Head, Clearance Cairn
NGR 359920 513556
HER no -
Site Type Clearance Cairn
Period Post-medieval to Modern
Source OA North Walk-over Survey
Description An amorphous clearance cairn located in the north-western corner of a field to the north-west of Lane Head Farm. It consists of a pile of mixed-sized and -shaped cleared stones measuring up to 6m in diameter by up to 0.5m high. It looks like machine clearance of field walls rather than primary field clearance.

Assessment The site lies adjacent to the proposed pipeline route and may be affected by the works.

Site number 58
Site Name Lane End, Narrow Ridge and Furrow Cultivation
NGR 359887 513494
HER no -
Site Type Narrow Ridge and Furrow
Period Post-medieval to Modern
Source OA North Walk-over Survey
Description An area of narrow ridge and furrow cultivation which is orientated in a roughly south-west/north-east direction. The cultivation is denuded and slight in nature and is clearly

later than the surrounding medieval strip lynchets field-system. The cultivation measures up to 2.5m between ridges.

Assessment The site lies within the proposed pipeline route and will be affected by the works.

Site number 59
Site Name Lane End, Sheep Smoot
NGR 360025 513544
HER no -
Site Type Sheep Smoot
Period Post-medieval to Modern
Source OA North Walk-over Survey
Description A small sheep smoot located in the south-east corner of a field and adjacent to a quarry scoop (Site 55). It has a wooden lintel and measures up to 0.5m wide and 0.75m high.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 60
Site Name Lane Ends, Field Boundary I
NGR 359983 513492
HER no -
Site Type Boundary Bank
Period Medieval to Post-medieval
Source OA North Walk-over Survey
Description An L-shaped field boundary bank demarcating the southern limits of visible cultivation within an area of medieval strip lynchets (Site 54). The bank measures up to 70m long by 3m wide and is up to 0.5m high; it turns a right-angle to the north on the western end. It is not shown on any of the historic mapping but probably relates to post-medieval field enclosure. It is crossed by a later field boundary wall foundation (Site 61).
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 61
Site Name Lane Ends, Field Boundary II
NGR 359989 513491
HER no -
Site Type Boundary Wall
Period Post-medieval
Source OA North Walk-over Survey
Description Two short sections of relict field boundary wall foundation extending perpendicular to the south of a walled green lane (Site 53). They measure approximately 30m long by 0.4m wide and are only 0.1-0.2m high and lay over a (slightly) earlier field boundary bank (Site 60). The site consists of a removed post-medieval boundary wall.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 62
Site Name Oddendale to Crosby Ravensworth, Trackway II
NGR 359803 513292 to 359953 513473
HER no -
Site Type Hollow Way/Trackway
Period Medieval to Post-medieval
Source OA North Walk-over Survey
Description A roughly linear sunken holloway located to the east of Oddendale Hall Farm, but not shown on any of the historic mapping. The site probably formed an access track running away from the green lane running between Oddendale to Crosby Ravensworth (Site 53) and towards the open common to the south. It measures very roughly 250m long and is up to 4m wide and 2m deep on the eastern end.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	63
Site Name	Lane Ends, Quarry/Stock Enclosure
NGR	359957 513495
HER no	-
Site Type	Quarry/Stock Enclosure
Period	Post-medieval
Source	Map regression, OA North Walk-over Survey
Description	A sub-square depression with a bank and possible collapsed wall footings surrounding it. It is shown as a sub-square enclosure on the OS First Edition mapping and it clearly blocks a green lane (Site 53). The site survives as a quarry scoop within an enclosure, measuring up to 10m square by 0.7m deep. The site may have once had a stock management function.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	64
Site Name	Oddendale Hall Farm, Strip Lynchet Field system I
NGR	359784 513525
HER no	-
Site Type	Strip Fields
Period	Medieval
Source	Map regression, OA North Walk-over Survey
Description	A relict curvilinear section of medieval strip lynchet field-system, part of an almost complete surviving pattern of such fields between Oddendale and Crosby Ravensworth. It is orientated roughly north and extends downward towards a gully. It is partially shown in the pattern of the current enclosed field system and follows a classic medieval aratral reversed 'S'-shaped pattern. The lynchets survive in the entire of the field crossed by the proposed pipeline and can be seen moderately well in the field to the north which has been ploughed. The lynchets measure up to 3m wide and 0.6m high and there is slight ridge and furrow cultivation, measuring up to 3-4m wide between ridges, evident seen between the lynchets. The system is visibly overlain by the current boundary wall and the trackway (Site 34) which both rise and fall over the lynchets (Plate 9). The surviving field-system is bounded on the south side by the walled green lane (Site 53). The site forms the best surviving portion of the strip lynchet field-system complex that will be directly impacted upon by the proposed pipeline route.
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	65
Site Name	Oddendale Hall Farm, Quarry I
NGR	359708 513468
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	OA North Walk-over Survey
Description	A small circular quarry scoop sat adjacent to a farm trackway (Site 34) and on the eastern side of Oddendale Hall Farm. It measures approximately 6m in diameter by up to 0.6m deep.
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	66
Site Name	Oddendale Hall Farm, Quarry II
NGR	359670 513458
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	OA North Walk-over Survey

Description	A small circular quarry scoop adjacent to a farm trackway (Site 34) and on the eastern side of Oddendale Hall Farm. It measures <i>c</i> 6m in diameter by up to 0.6m deep.
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	67
Site Name	Oddendale Hall Farm, Quarry III
NGR	359679 513435
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	Map regression, OA North Walk-over Survey
Description	A small linear quarry scoop with a further semi-circular scoop on the eastern end. The site is located on the eastern side of Oddendale Hall Farm and is shown on the current OS mapping. It measures <i>c</i> 72m long by only 2-3m wide and is up to 1m deep. The quarry works the south side of a natural linear terrace of outcropping limestone.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	68
Site Name	Oddendale Hall Farm, Field Boundary I
NGR	359704 513421
HER no	-
Site Type	Boundary Wall
Period	Medieval to Post-medieval
Source	Map regression, OA North Walk-over Survey
Description	A short section of curvilinear wall foundation which forms part of the northern boundary of a green lane (Site 53). It consists of a line of orthostatic foundation stones measuring up to 13m long by 1m wide and up to 0.4m high. The site may have also formed part of a stock enclosure.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	69
Site Name	Oddendale Hall Farm, Spring
NGR	359619 513450
HER no	-
Site Type	Spring
Period	Post-medieval to Modern
Source	OA North Walk-over Survey
Description	A well-constructed curvilinear stone-walled water trough. It is set into the hillslope and measures up to 3m wide by up to 1m high.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	70
Site Name	Oddendale Hall Farm, Field Boundary II
NGR	359554 513433
HER no	-
Site Type	Boundary Bank
Period	Post-medieval
Source	Map regression, OA North Walk-over Survey
Description	A relict boundary bank which was shown on the First Edition OS mapping (1863), and is located to the immediate east of Oddendale Hall Farm. It measures up to 98m long by 2m wide and up to 0.3m high and turns a right angle to the north on the eastern end.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	71
Site Name	Oddendale Hall Farm, Field Boundary III

NGR	359551 513442
HER no	-
Site Type	Boundary Bank/Lynchet
Period	Medieval to Post-medieval
Source	OA North Walk-over Survey
Description	A linear field boundary bank/lynchet located immediately to the east of Oddendale Hall Farm. It is not shown on any of the historic mapping. It measures <i>c</i> 76m long by up to 0.3m high.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	72
Site Name	Oddendale Hall Farm, Strip Lynchet Field system II
NGR	359568 513487
HER no	-
Site Type	Strip Fields
Period	Medieval
Source	Map regression, OA North Walk-over Survey
Description	A relict section of medieval strip lynchet field-system between Oddendale and Crosby Ravensworth. The lynchets survive across the entire of a small triangular field located immediately to the east of Oddendale Hall Farm and measure up to 0.3m high.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	73
Site Name	Oddendale Hall Farm, Gateposts I
NGR	359843 513511
HER no	-
Site Type	Gateposts
Period	Post-medieval to Modern
Source	OA North Walk-over Survey
Description	A pair of simple sub-rectangular quarried limestone gateposts located on the side of the trackway (Site 34) to the east of Oddendale Hall Farm. The southernmost gatepost has collapsed and is broken in half.
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	74
Site Name	Oddendale Hall Farm, Gateposts II
NGR	359739 513409
HER no	-
Site Type	Gateposts
Period	Post-medieval
Source	OA North Walk-over Survey
Description	A pair of roughly-hewn quarried limestone gateposts located on the south side of a green lane (Site 53) to the east of Oddendale Hall Farm. The gateway is narrow in width, does not form a modern farm vehicle gate and is probably of some antiquity. One of the posts has a circular pole hole within it.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	75
Site Name	Oddendale Hall Farm, Narrow Ridge and Furrow Cultivation
NGR	359579 513410
HER no	-
Site Type	Narrow Ridge and Furrow
Period	Post-medieval
Source	OA North Walk-over Survey

Description	A small parcel of narrow ridge and furrow cultivation ridges located immediately to the east of Oddendale Hall Farm. The ridges, which are orientated roughly east/west, are very denuded and probably form relatively recent cultivation ridges.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	76
Site Name	Oddendale Hall Farm, Sheep Shelter/Store
NGR	359522 513466
HER no	-
Site Type	Sheep Shelter/Store
Period	Post-medieval
Source	Map regression, OA North Walk-over Survey
Description	A small single-celled dry-stone store or shelter located on the south-west internal corner of the field to the immediate east of the farmyard at Oddendale Hall Farm. It is shown on the OS Second Edition 25" map of 1897, measures approximately 3.5m square by up to 1.4m high, and has an entrance on the north side.
Assessment	The site lies adjacent to the proposed pipeline route and may be affected by the works.

Site number	77
Site Name	Oddendale Hall Farm, Field Boundary IV
NGR	359659 513525
HER no	-
Site Type	Boundary Bank
Period	Post-medieval
Source	Map regression, OA North Walk-over Survey
Description	A linear relict field boundary, surviving as a shallow denuded bank in a ploughed field located to the east of Oddendale Hall Farm. It is shown on the historic mapping and would have originally measured up to 127m long.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	78
Site Name	Oddendale Hall Farm, Quarry IV
NGR	359963 513511
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	OA North Walk-over Survey
Description	A semi-circular quarry scoop located to the east of Oddendale Hall Farm and on the northern edge of a green lane (Site 53). It measures c 5.5m long by 4m wide and is up to 0.8m deep.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	79
Site Name	Oddendale settlement
NGR	359413 513377
HER no	-
Site Type	Settlement
Period	Medieval
Source	Map regression / Documentary research
Description	Oddendale is recorded as <i>Odehenedale</i> in 1262, and is thought to be derived from a German personal name: Odelin or Odelina, which was used independently in England from the time of the Domesday Survey (Smith 1967, 157). Oddendale comprised three farms, and was part of the Barony of Westmorland held by the Clifford Family (Whellan 1860; Nicholson and Burn 1777, 274-5).
Assessment	The site lies within the proposed pipeline route and may be affected by the works.

Site number 80
Site Name Barn to the north of Oddendale
NGR 359297 513465
HER no -
Site Type Barn
Period Post-medieval
Source Map regression
Description A barn first shown on the First Edition OS mapping, and still extant on the mapping of 1919-20, but which is no longer extant.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 81
Site Name Thunder Stones East, Shap Rural
NGR 358467 515516
HER no 14677
Site Type Stone
Period Unknown
Source HER
Description Thunder Stones East. There are four Thunder Stones in Shap parish, two being near the parish boundary (Site 22 to the west and Site 81 to the east), the other two are west of Shap, in fields near Abbey Wood. There are also three Thunder Stones in Orton Parish, and several others in Westmorland. Some are boundary stones.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 82
Site Name Quarry, north of Oddendale
NGR 360014 513761
HER no -
Site Type Quarry
Period Post-medieval
Source Map regression
Description A small quarry is shown in an area to the north-east of Oddendale on the Ordnance Survey Second Edition 6": 1 mile map of 1899.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 83
Site Name Holloways to the north-west of Oddendale
NGR 359162 513572
HER no -
Site Type Holloways
Period Unknown
Source Aerial Photographs
Description Holloways passing to the west of Oddendale, aligned south-east/north-west, are visible as a series of linear parallel scars on Google Earth. The site is truncated on its south-east side by a major pipeline. The holloways continue to the south as Site 84.
Assessment The site lies within the proposed pipeline route and may be affected by the works.

Site number 84
Site Name Holloways to the west of Oddendale
NGR 359214 513274
HER no -
Site Type Holloways
Period Unknown
Source Aerial Photographs

Description	Holloways passing to the west of Oddendale, aligned south-east/north-west, are visible as a series of linear parallel scars on Google Earth. The site is truncated by a major pipeline. The holloways continue to the north as Site 83 .
Assessment	The site lies within the proposed pipeline route and may be affected by the works.

Site number	85
Site Name	Relict field boundaries to the south-west of Iron Hill
NGR	359422 514556
HER no	-
Site Type	Field boundaries
Period	Post-medieval
Source	Aerial Photographs
Description	Field boundaries to the south-west of Iron Hill, forming the north-west and north-east sides of a large roughly rectangular field (see also Site 86). These boundaries are not shown on the historic mapping and, therefore, were removed some time prior to the late nineteenth century.
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	86
Site Name	Relict field boundary to the south-west of Iron Hill
NGR	359392 514010
HER no	-
Site Type	Field boundary
Period	Post-medieval
Source	Aerial Photographs
Description	A field boundary to the south-west of Iron Hill, forming the south-west corner of a large roughly rectangular field (see also Site 85). This boundary is not shown on the historic mapping, and appears to have been moved prior to quarrying (Site 26) taking place in this area. The quarry is shown on the First Edition OS map (1863), indicating that the field boundary was removed some time prior to the late nineteenth century.
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	87
Site Name	Shap to Wickerslack road
NGR	357740 515617 to 358987 515646
HER no	-
Site Type	Road
Period	Post-medieval
Source	Map regression
Description	The west/east road from Shap to Wickerslack shown on Jeffery's Map of Westmorland, 1768. This is likely to be an early road, connecting the medieval village of Shap to other medieval villages including Wickerslack to the east.
Assessment	The site lies within the proposed pipeline route and will be affected by the works.

Site number	88
Site Name	Holloways west of Castlehouse Scar Plantation
NGR	358844 514855
HER no	-
Site Type	Holloways
Period	Unknown
Source	Aerial Photographs
Description	Holloways passing on the east side of Hardendale and the west side of Castlehouse Scar, aligned south-west/north-east, visible as a series of linear parallel scars on Google Earth. Some of the holloways appear to turn northwards, approximately parallel with the road on the west side of the plantation, but others appear to head north-east into the plantation.
Assessment	The site lies within the proposed pipeline route and may be affected by the works.

Site number	89
Site Name	Slacks farmstead, south-east of Oddendale
NGR	360299 513410
HER no	-
Site Type	Farmstead
Period	Post-medieval
Source	Map regression
Description	A farmstead named Slacks, shown on the First Edition OS map (1863), but derelict (unroofed) on recent aerial photographs.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	90
Site Name	Well, north of Slacks
NGR	360382 513521
HER no	-
Site Type	Well
Period	Post-medieval
Source	Map regression
Description	A well, located to the north-east of Slacks, shown on the first edition OS map (1863), but not shown on later mapping.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	91
Site Name	Hardendale Quarry, Quarry I
NGR	35922 51462
HER no	-
Site Type	Quarry / shake hole
Period	Post-medieval
Source	LUAU 1996
Description	Three pronounced depressions and a trackway at the northern extent of the site. The deepest of the hollows was a shake hole 10m in diameter and 1.50m deep with sloping sides down to a base c1.50m across (forming a cone shape). The other two were sub-circular, shallow hollows 5m and 10m across, either the result of quarrying or the beginnings of shake holes. A fourth very shallow depression was noted nearby. Immediately to the south of the shake holes a short length of worn trackway was evident, approximately 4m wide and visible for a distance of c25m. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	92
Site Name	Hardendale Quarry, Quarry II
NGR	35922 51450
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	LUAU 1996
Description	A small quarry with an exposed north / south face c15m in length, up to 1m deep. To the east there was a small conical depression 4m in diameter, most probably a shake hole. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	93
Site Name	Hardendale Quarry, Quarry III
NGR	35919 51438
HER no	-
Site Type	Quarry

Period	Post-medieval
Source	LUAU 1996
Description	A shallow sub-circular quarry adjacent to and respecting a dry-stone wall field boundary, it measured 10m in diameter and was 0.40m deep with steep sides and a flat base. A very low bank leading northward from the edge of the quarry proved to be a natural undulation where limestone lay close to the surface. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	94
Site Name	Hardendale Quarry, Quarry IV
NGR	35921 51427
HER no	-
Site Type	Shake holes
Period	Post-medieval?
Source	LUAU 1996
Description	A series of shake holes in the western half of the triangular field, given as Lingy Close in the tithe award (1845). Pronounced sub-circular depressions, up to 10m across and 1m deep, they frequently have steeply sloping sides and narrow bases. Other large shallow depressions in the vicinity may be the result of quarrying or the beginnings of shake holes. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	95
Site Name	Hardendale Quarry, Quarry V
NGR	35920 51434
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	LUAU 1996
Description	A large, irregular quarry working, measuring approximately 20m (north / south) by 11m by 0.60m deep, with small mounds of spoil resulting from extraction. To the west a faint trace of a possible bank was visible, however, excavation did not reveal any evidence of a linear feature. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	96
Site Name	Hardendale Quarry, Trackway I
NGR	35931 51420
HER no	-
Site Type	Trackway
Period	Post-medieval
Source	LUAU 1996
Description	A trackway aligned approximately north-west / south-east, which rises for most of its length across a gentle, north-facing slope. It measured up to 3m across and was slightly sunken (up to 0.30m deep, but frequently much shallower). A faint trace of the track continues to the south beyond the present dry-stone wall field boundary, appearing to predate its construction, and giving an overall length of 135m. The site has been partially destroyed by the extension to Hardendale Quarry.
Assessment	The site lies adjacent to the proposed pipeline route and may be affected by the works.

Site number	97
Site Name	Hardendale Quarry, Quarry VI
NGR	35922 51408
HER no	-

Site Type	Shake holes
Period	Post-medieval?
Source	LUAU 1996
Description	A series of sub-circular depressions beside the road, mostly shake holes although some may be the result of quarrying. Those adjacent to the road side have been completely or partially backfilled (including blocks of concrete). The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	98
Site Name	Hardendale Quarry, Quarry VII
NGR	35922 51361
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	LUAU 1996
Description	A disturbed area featuring small irregular quarries and small mounds and hollows, the result of extraction and associated spoil.
Assessment	The site lies adjacent to the proposed pipeline route and may be affected by the works.

Site number	99
Site Name	Hardendale Quarry, Quarry VIII
NGR	35899 51352
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	LUAU 1996
Description	A shallow sub-rectangular depression (in an area where stones protrude through the turf) measuring 11m by 4m with sloping sides and a fairly flat base; the result of quarrying. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	100
Site Name	Hardendale Quarry, Quarry IX
NGR	35929 51363
HER no	-
Site Type	Quarry?
Period	Post-medieval?
Source	LUAU 1996
Description	A small, sub-circular hollow, most probably the result of quarrying. It is situated at the edge of the Transco pipeline corridor and may have been affected by construction work.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	101
Site Name	Hardendale Quarry, Disturbance I
NGR	35930 51369
HER no	-
Site Type	Modern disturbance
Period	Modern
Source	LUAU 1996
Description	A flat, sub-rectangular area of stones. It is situated on the line of the Transco pipeline; this feature must be associated with the construction or servicing of the pipeline.
Assessment	The site lies adjacent to the proposed pipeline route and may be affected by the works.

Site number	102
Site Name	Hardendale Quarry, Disturbance II
NGR	35933 51378
HER no	-
Site Type	Disturbance?
Period	Modern
Source	LUAU 1996
Description	An irregular flat area of stones (7m by 6m) visible on the surface at the edge of the pipeline corridor and possibly associated with its construction.
Assessment	The site lies adjacent to the proposed pipeline route and may be affected by the works.

Site number	103
Site Name	Hardendale Quarry, Quarry X
NGR	35923 51379
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	LUAU 1996
Description	A large quarry, c 30m across, cut into the west-facing exposed limestone scarp which also contains the lime kiln (Site 27). The exposed working face stands up to 3m in height, on the quarry floor there were small mounds and hollows associated with extraction. More recently rubbish has been dumped in the quarry. At the top of the working face there was a collapsed dry-stone wall describing the edge of the quarry. It measured 0.70m wide at the base and survived to a height of 0.30m. The wall presumably prevented livestock from straying over the edge of the quarry. Immediately to the north of this quarry there was a break in the exposed limestone scarp which has been, and still is, used as a means of gaining the top of the bluff. The track was up to 4m wide and rutted in places. At the top of the bluff a faint trace of trackway branches to the north leading toward the top (charge hole) of the lime kiln. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	104
Site Name	Hardendale Quarry, Quarry XI
NGR	35924 51383
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	LUAU 1996
Description	A quarry cut into the exposed limestone scarp to the south of the lime kiln (Site 27), its use may well be associated with the adjacent kiln. The quarry measures c 15m across and the working face stands to a height of 1.75m. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	105
Site Name	Hardendale Quarry, Quarry XII
NGR	35926 51428
HER no	-
Site Type	Quarry
Period	Post-medieval
Source	LUAU 1996
Description	A quarry hollow (12m by 6m by 0.50m deep) lying on a short west-facing slope. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 106
Site Name Hardendale Quarry, Quarry XIII
NGR 35926 51436
HER no -
Site Type Quarry
Period Post-medieval
Source LUAU 1996
Description A quarry hollow (9m by 5m by 0.40m deep) lying on a short west-facing slope. The site has been destroyed by the extension to Hardendale Quarry.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 107
Site Name Hardendale Quarry, Quarry XIV
NGR 35926 51439
HER no -
Site Type Quarry
Period Post-medieval
Source LUAU 1996
Description A quarry hollow (10m by 4m by 0.50m deep) lying on a short west-facing slope. The site has been destroyed by the extension to Hardendale Quarry.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 108
Site Name Hardendale Quarry, Quarry XV
NGR 35909 51437
HER no -
Site Type Quarry
Period Post-medieval
Source LUAU 1996
Description An irregular quarry hollow to the west of a low exposed quarry face (Site 26). It measured 15m by 7m and was up to 0.50m deep. The site has been destroyed by the extension to Hardendale Quarry.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 109
Site Name Hardendale Quarry, Trackway II
NGR 35926 51453
HER no -
Site Type Track?
Period Post-medieval?
Source LUAU 1996
Description A linear depression, aligned north-east/south-west, possibly representing a route used as a trackway (visible for up to 50m). This area was marked by several short stretches of very low linear undulations on a similar alignment, which could reflect intermittent passage of traffic or which may be the result of natural processes. The site has been partially destroyed by the extension to Hardendale Quarry.
Assessment The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number 110
Site Name Hardendale Quarry, Mound
NGR 35932 51369
HER no -
Site Type Mound?
Period Unknown
Source LUAU 1996

Description	A small oval mound measuring 4m by 2m by 0.40m situated at the edge of the gas pipeline corridor. This may be related to, or affected by, the pipeline construction.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	111
Site Name	Hardendale Quarry, Excavated Structure
NGR	35929 51407
HER no	-
Site Type	Structure
Period	Unknown
Source	LUAU 1996
Description	Trench 30 revealed a sub-circular arrangement of eight, irregularly spaced stakeholes (0.05m in diameter by 0.07m deep with a pointed base) amongst animal burrows of a similar size. The apparent circle of stakeholes measured 1.23m in diameter and may have been the result of a temporary structure holding feed for livestock (LUAU 1996). The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	112
Site Name	Hardendale Quarry, Findspot I
NGR	35921 51445
HER no	-
Site Type	Findspot
Period	Prehistoric
Source	LUAU 1996
Description	A single worked chert fragment consisting of an irregular waste flake, recovered from Trench 47 (LUAU 1996). Due to the poor quality of the chert it is difficult to determine the nature and technology of the flint material. The retrieved material included only one demonstrably worked flake which suggests the level of activity was very low. It was not possible to attribute a date to this material. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

Site number	113
Site Name	Hardendale Quarry, Findspot II
NGR	35916 51445
HER no	-
Site Type	Findspot
Period	Prehistoric
Source	LUAU 1996
Description	A single worked chert fragment consisting of an unretouched flake, recovered from Trench 50 (LUAU 1996). Due to the poor quality of the chert it is difficult to determine the nature and technology of the flint material. The retrieved material included only one demonstrably worked flake which suggests the level of activity was very low. It was not possible to attribute a date to this material. The site has been destroyed by the extension to Hardendale Quarry.
Assessment	The site lies outside of the proposed pipeline route and will not be affected by the works.

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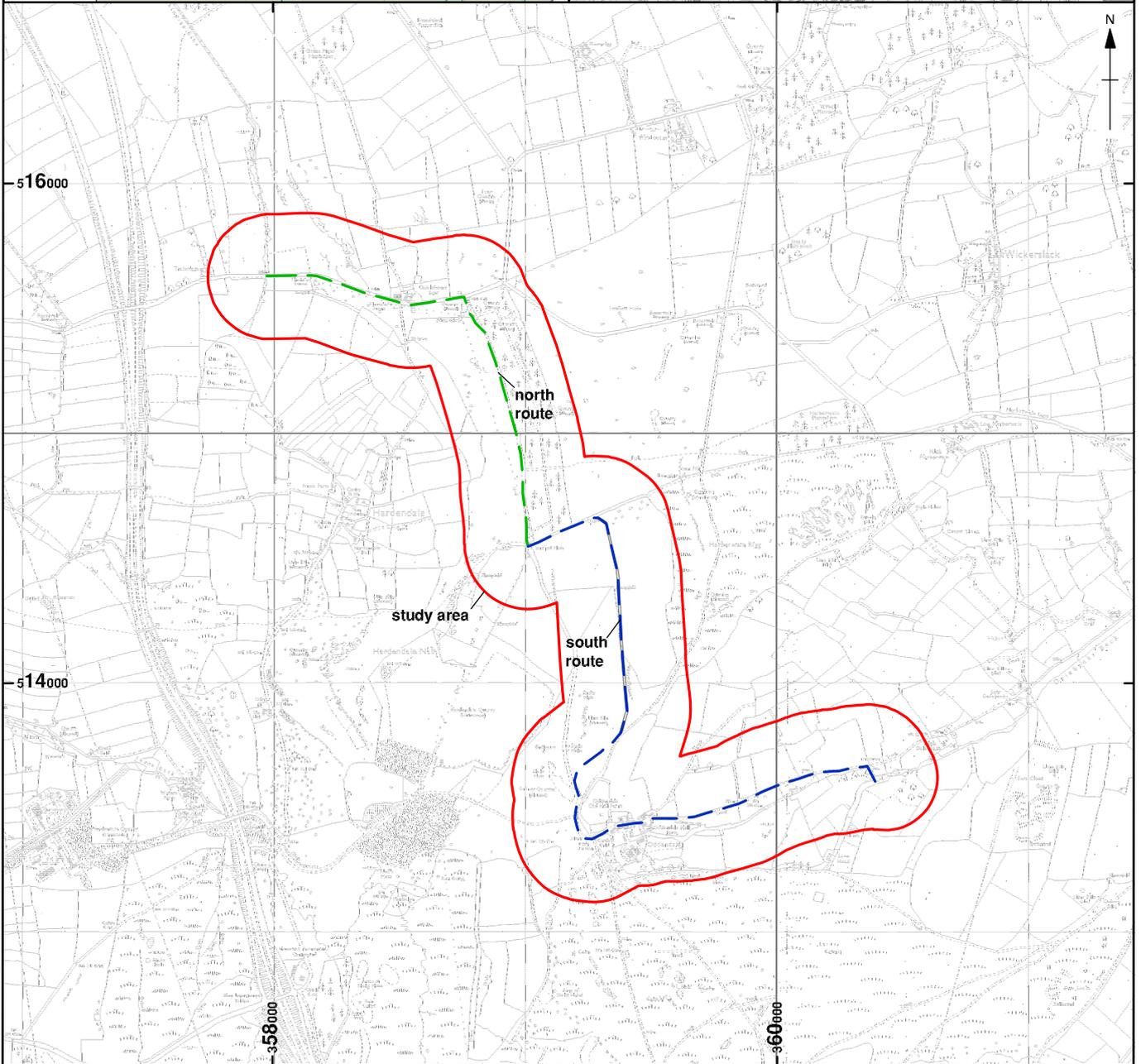
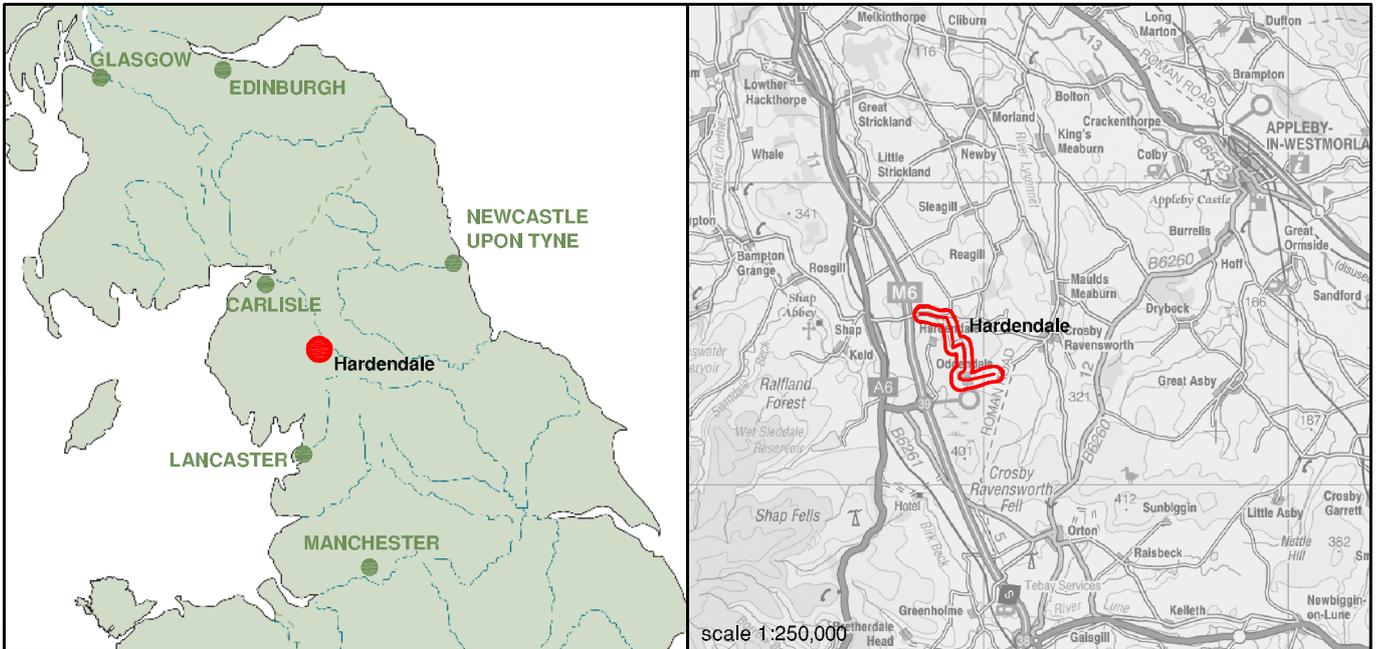
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1:25,000 @ A4



JQ*L10092*AMS*18-11-08

Figure 1: Site location

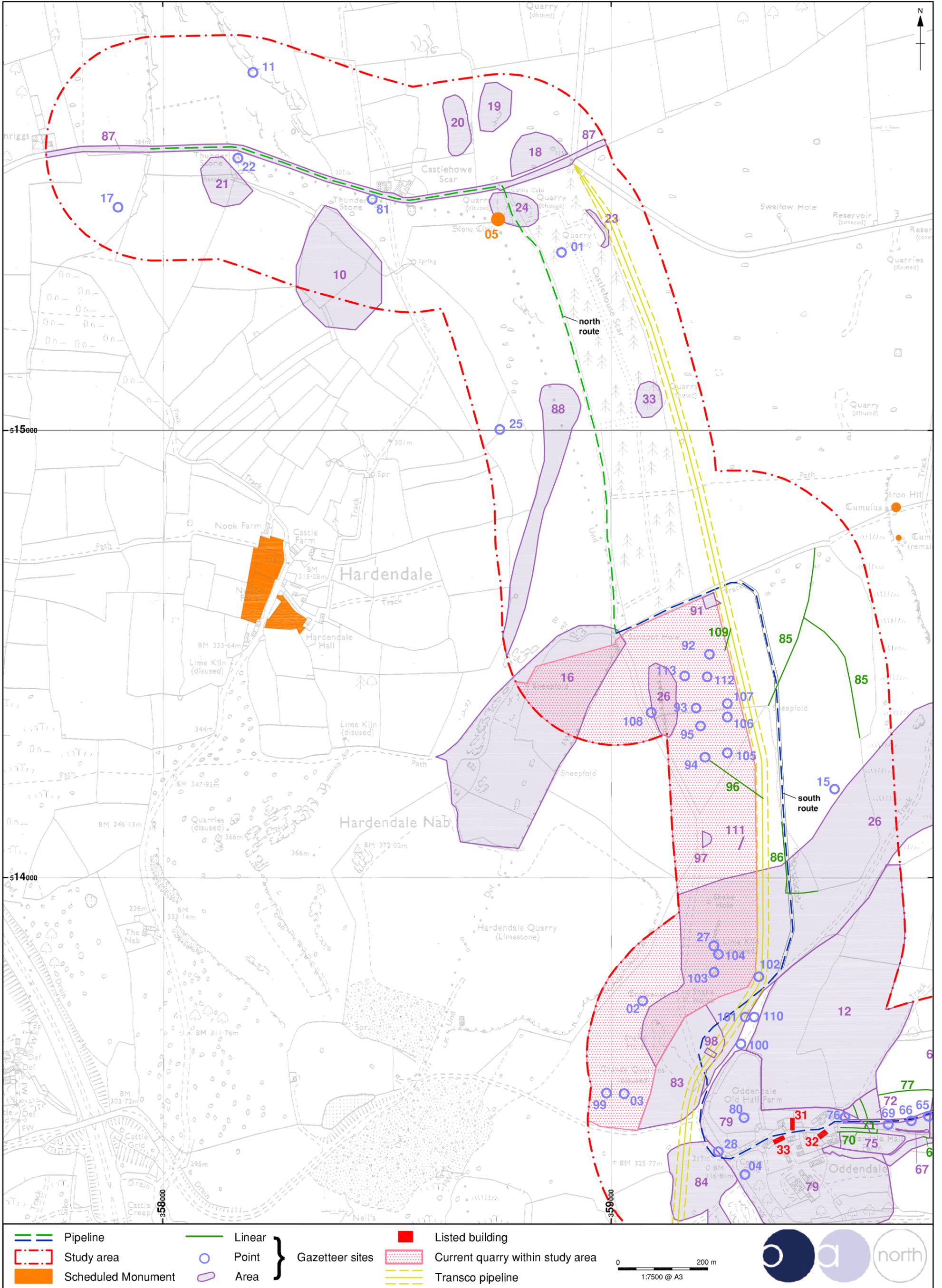
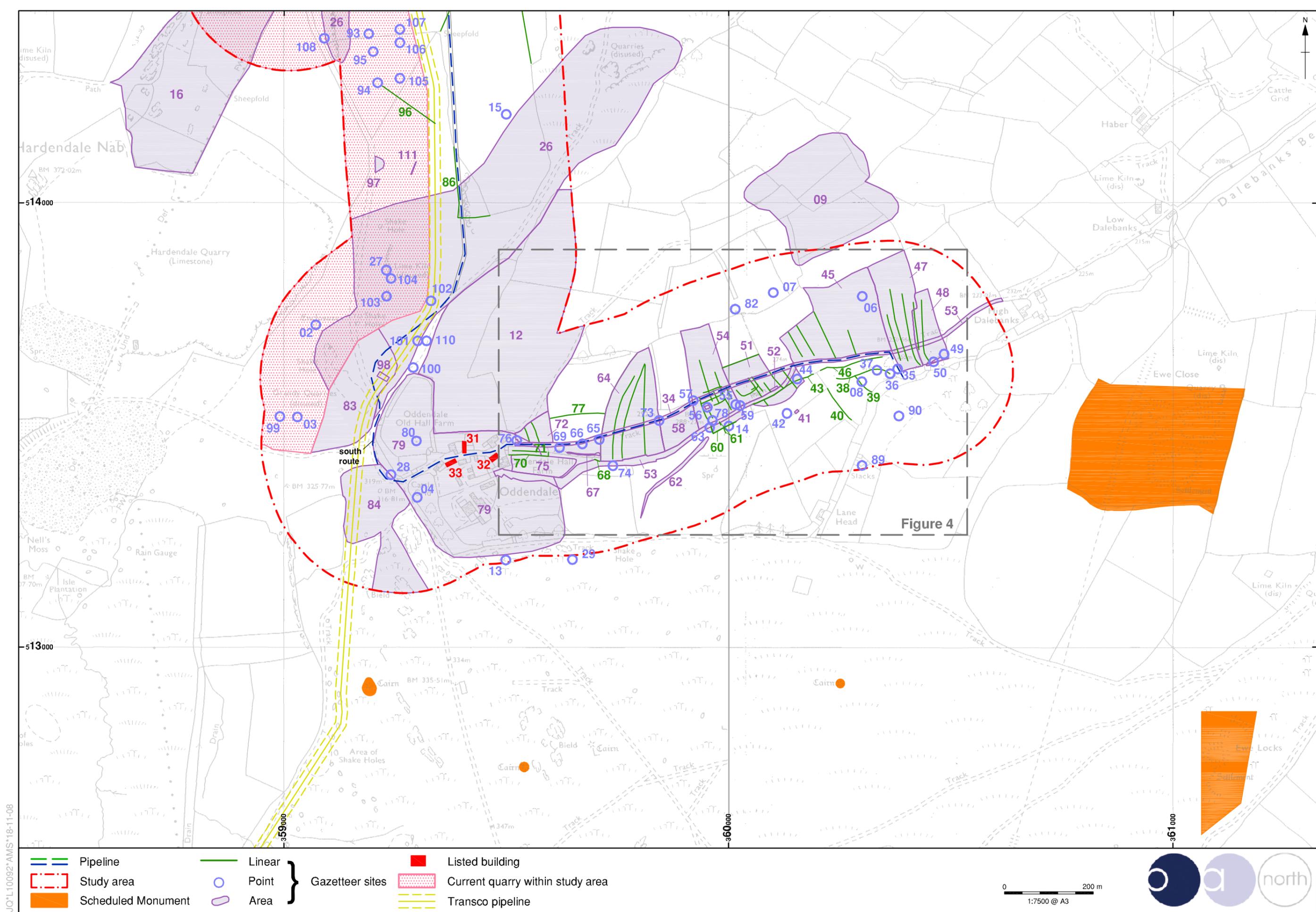


Figure 2: Gazeteer of sites - northern section



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Figure 3: Gazetteer of sites - southern section

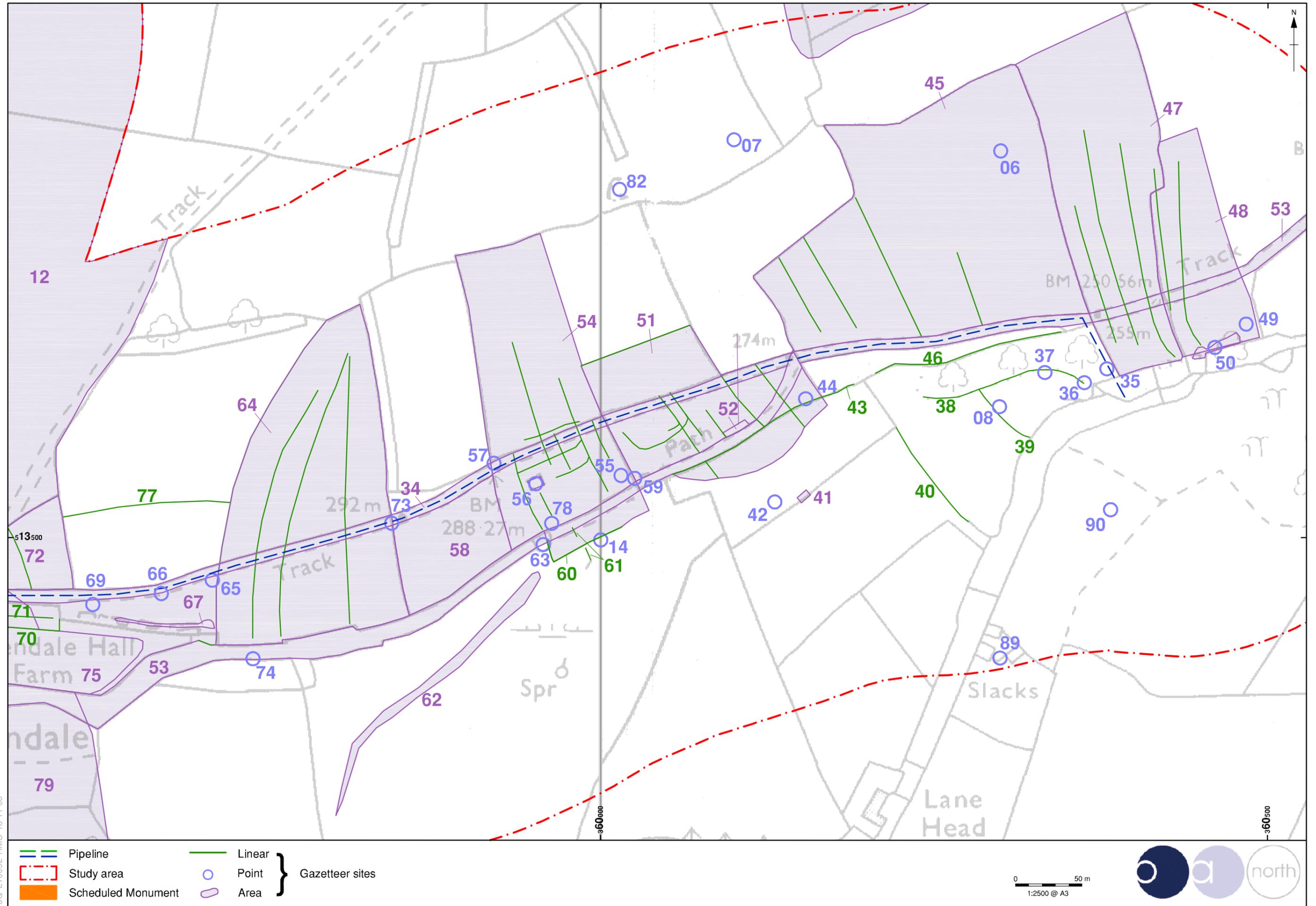


Figure 4: Gazetteer of sites, detail of the section east of Oddendale



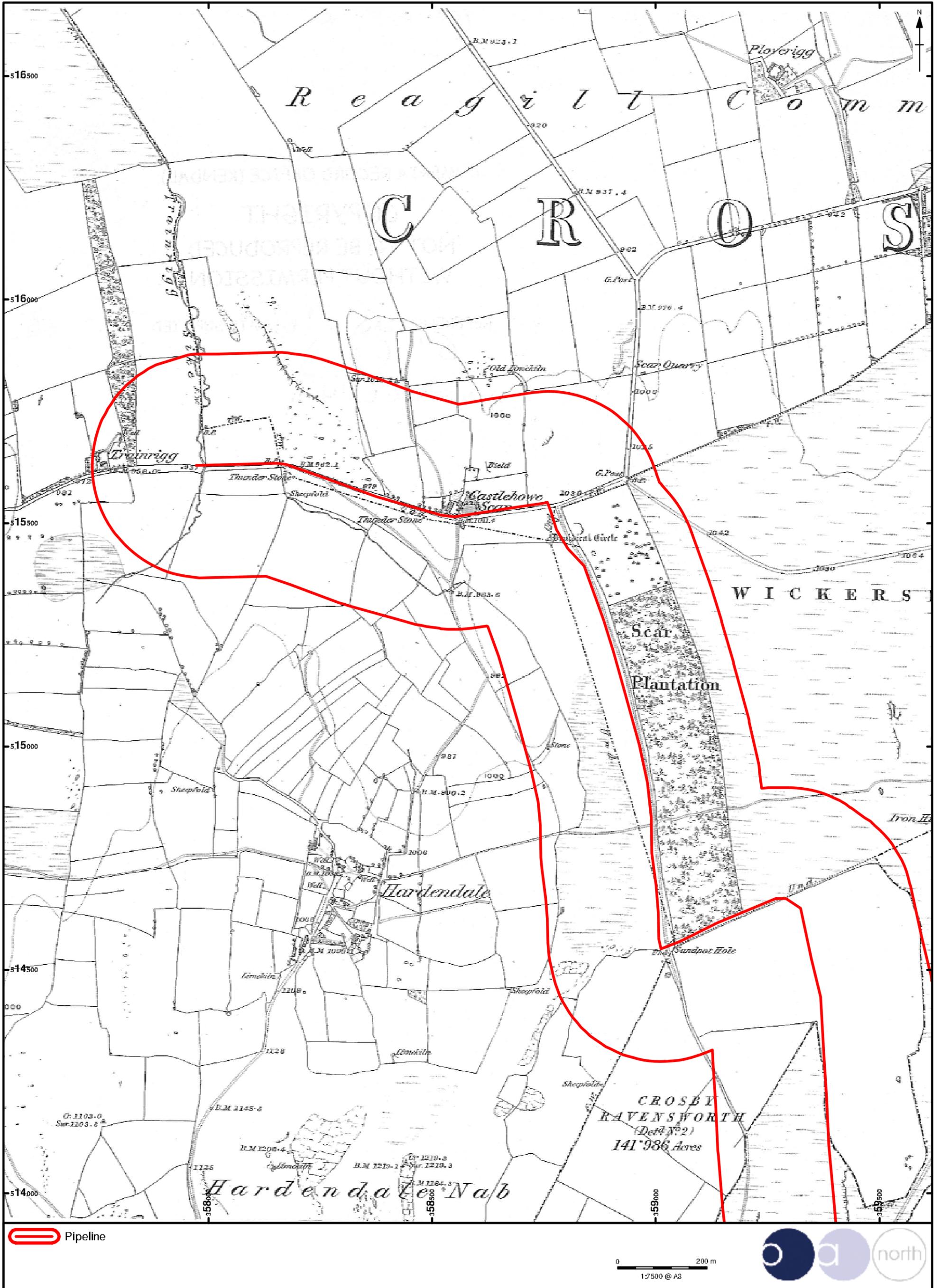


Figure 5: Northern section superimposed on the Ordnance Survey 6" to 1 mile map, 1863

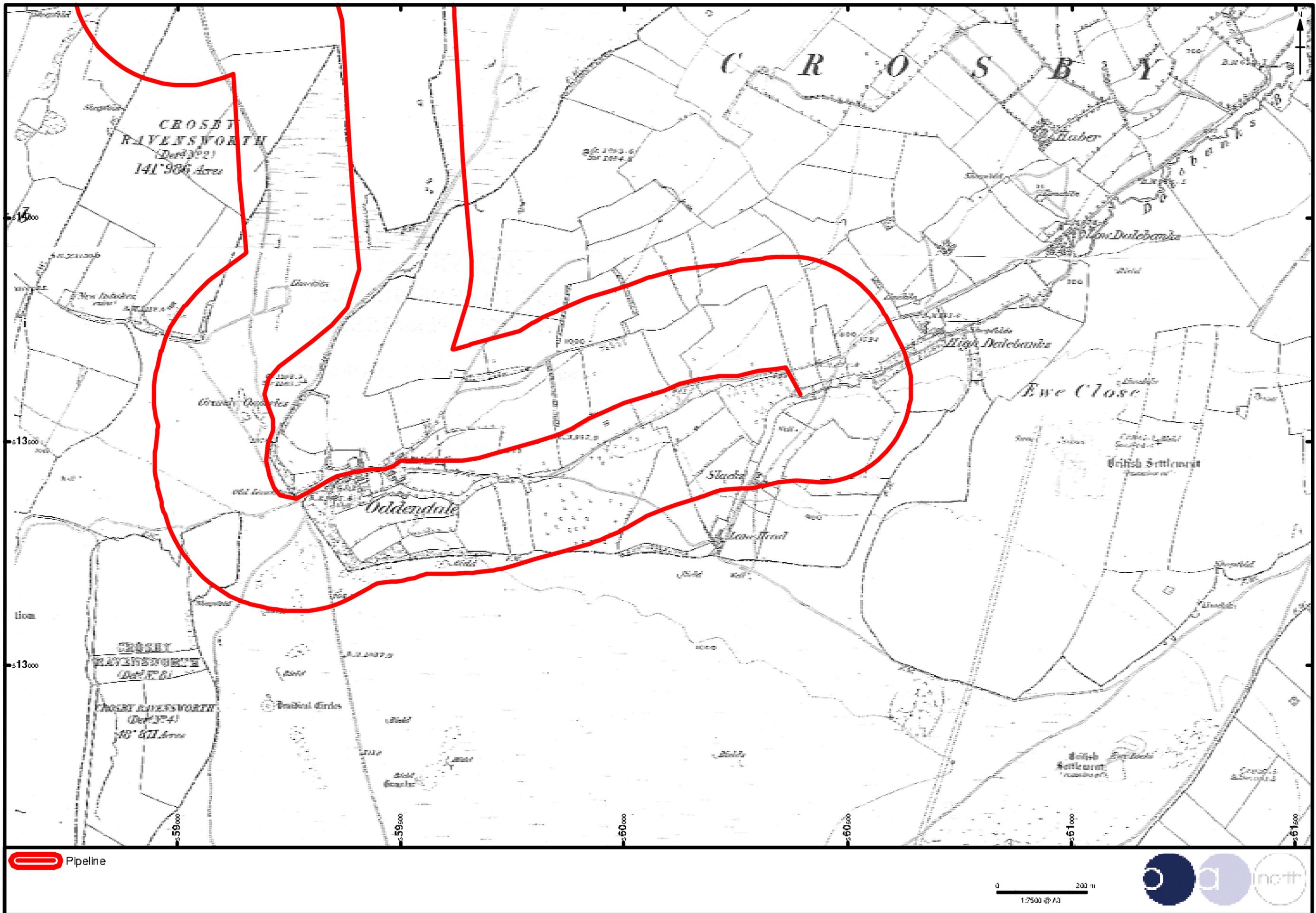


Figure 6: Southern section superimposed on the Ordnance Survey 6" to 1 mile map, 1863



Plate 1: Castlehow Scar stone circle, Scheduled Monument (Site 05)

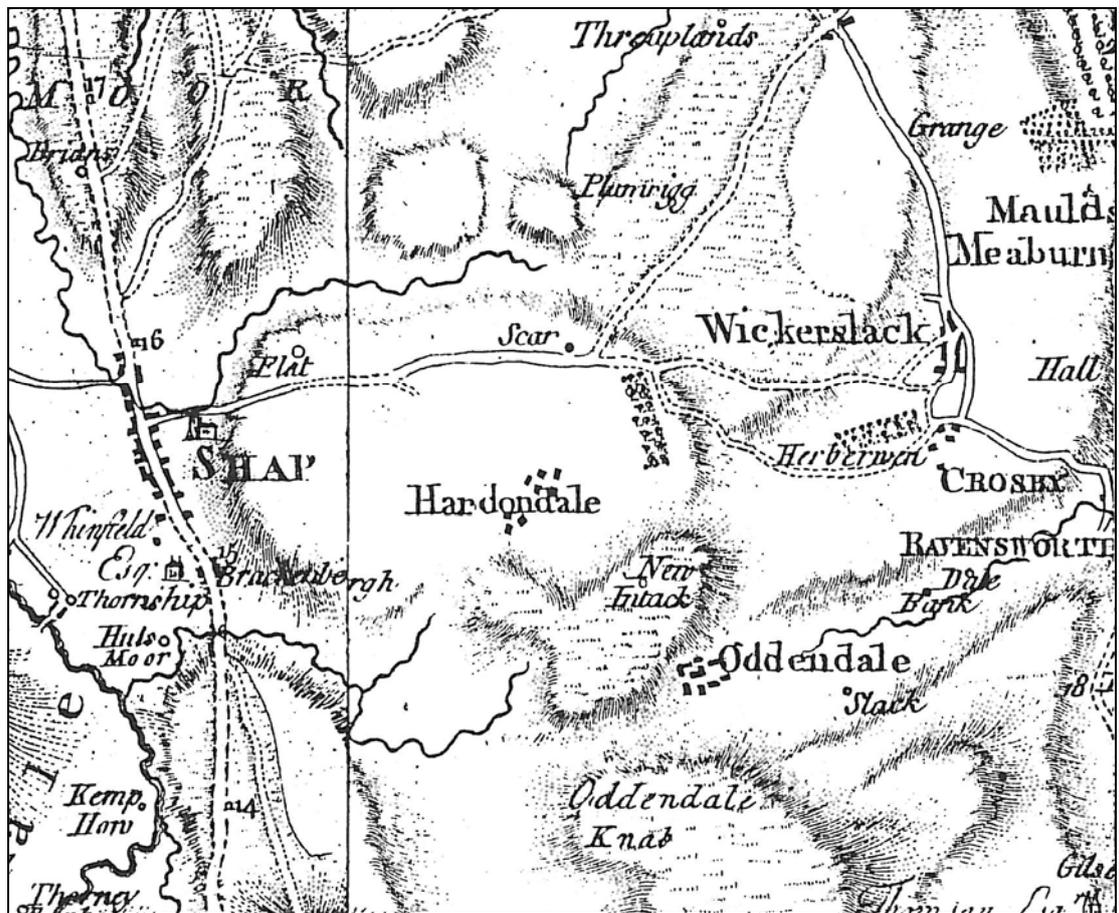


Plate 2: Extract from Jeffery's Map of Westmorland, 1768

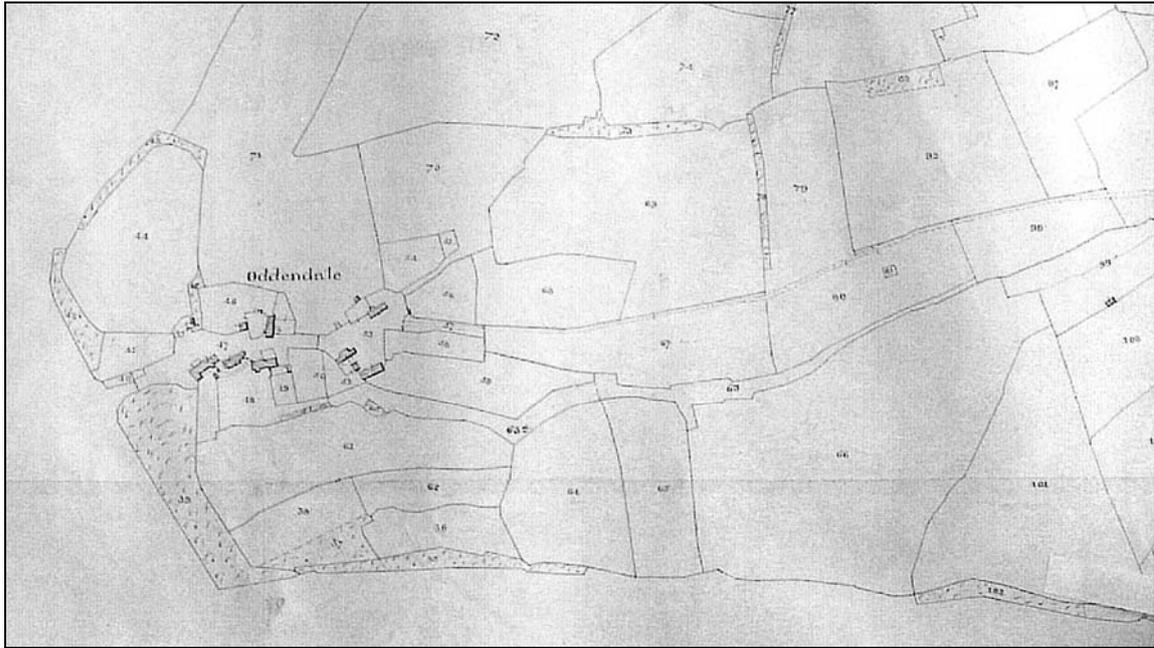


Plate 3: Extract from the Crosby Ravensworth Tithe of 1845, showing Oddendale



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Plate 10: Ruinous remains of a barn or byre at Lane Head (Site **56**)



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