



**Bathgate Trunk Main:
Desk-based Cultural Heritage Assessment
Project 4763**

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Bathgate Trunk Main: Desk-based Cultural Heritage Assessment

On behalf of: Scottish Water

NGR: NT 17655 71604 to NGR NT 09803 72294

Project Number: 4763

Report by: Christine Rennie

Illustrations: Christine Rennie

Project Manager: John Atkinson

DRAFT 29/09/17	John Atkinson Project Manager	FINAL 04/05/18	John Atkinson Managing Director
			

*This document has been prepared in accordance
with GUARD Archaeology Limited standard operating procedures.*

GUARD Archaeology Limited
52 Elderpark Workspace
100 Elderpark Street
Glasgow
G51 3TR

Tel: 0141 445 8800
Fax: 0141 445 3222
email: info@guard-archaeology.co.uk



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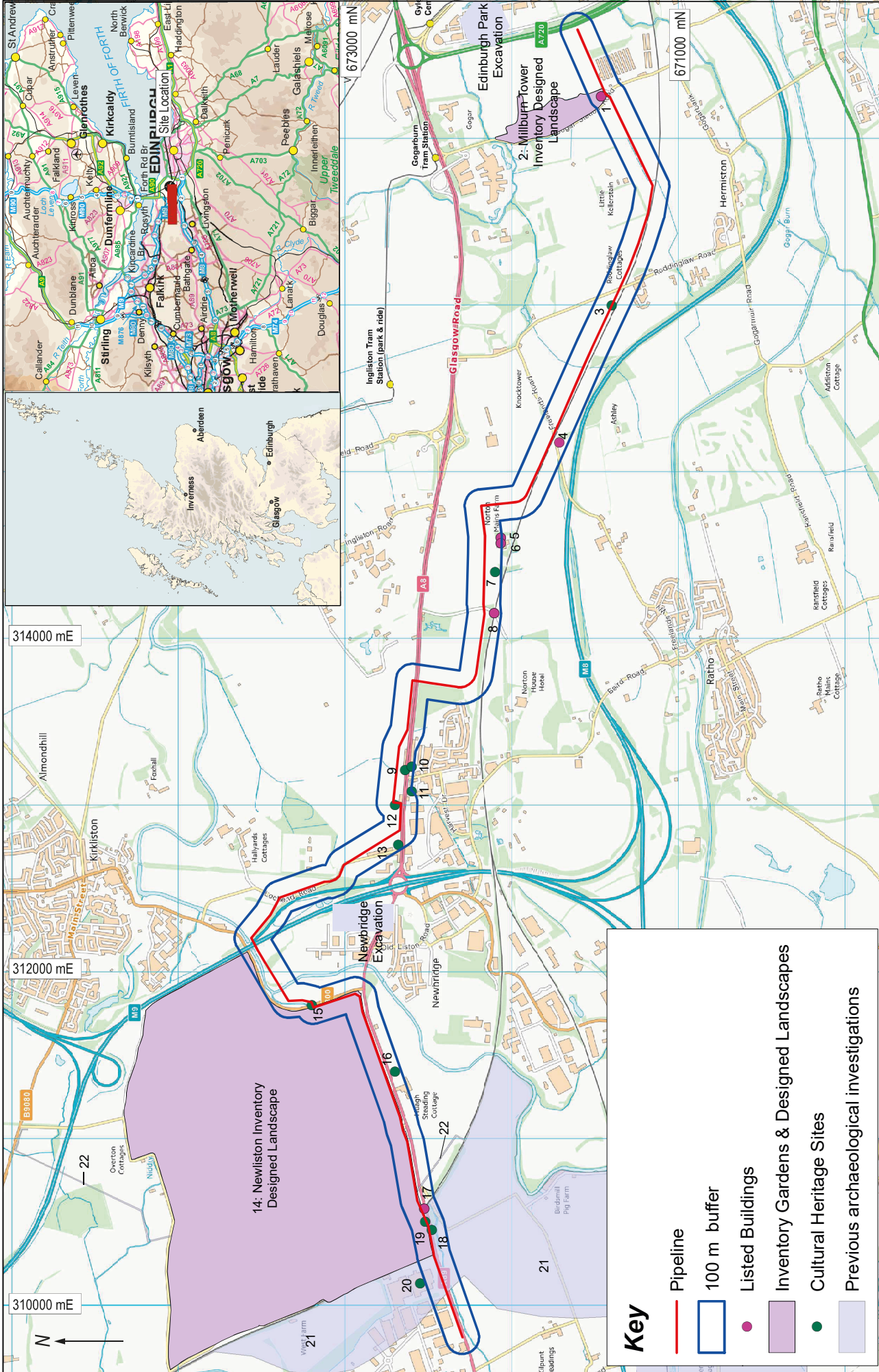
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Executive Summary

- 1.1 GUARD Archaeology Limited undertook an archaeological desk-based assessment of the proposed route for a water pipeline. The assessment comprised a walkover survey of the route combined with a map regression exercise and on-line searches of the National Record of the Historic Environment and the West Lothian Historic Environment Record. The City of Edinburgh Historic Environment Record is not available on-line.
- 1.2 The assessment indicates that two known cultural heritage sites are located on the proposed route of the water pipeline, both of which are nationally important Inventory Gardens and Designed Landscapes (IGDL). A further seventeen known cultural heritage sites, including one category A Listed Building, one category B Listed Building and four category C Listed Buildings, lie within 100 m of the proposed pipeline. Three previous archaeological investigations have been carried out within 100 m of the water pipeline. A further two archaeological investigations located beyond the 100 m buffer have been included in the assessment at the request of the City of Edinburgh Council Archaeology Service.
- 1.3 Those sections of the water pipeline within the two IGDLs would have no significant direct or indirect effect on these designated cultural heritage sites. The proposal would have no residual indirect effect on the settings of six Listed Buildings located within 100 m of the water pipeline.
- 1.4 Cartographic regression has found that since at least the mid-eighteenth century, the proposed water pipeline route has largely comprised agricultural fields, although some development has taken place immediately adjacent to the water pipeline route. This includes the construction of the Glasgow to Edinburgh railway line and the construction and widening of the A8 and A89 public roads. It is anticipated that significant ground disturbance would have been associated with each of these infrastructure programmes.
- 1.5 Although the water pipeline is not considered to be especially archaeologically sensitive, prehistoric remains are recorded within 100 m of the proposed water pipeline, Roman remains are known within the vicinity of the eastern end of the pipeline and at Newbridge, where evidence for medieval activity has also been recorded. Accordingly, GUARD Archaeology Limited would recommend that those areas of the water pipeline that have not been disturbed by infrastructure developments should be subject to archaeological monitoring.

Introduction

- 2.1 In September 2017, Scottish Water commissioned GUARD Archaeology Limited to undertake a desk-based assessment of the route for a proposed water pipeline between Gogar, Edinburgh and Broxburn, West Lothian (NGR: NT 17655 71604 to NGR NT 09803 72294).
- 2.2 The proposed water pipeline is located within the local authority areas of West Lothian and the City of Edinburgh. The land-use over the proposed pipeline route is overwhelmingly agricultural, although the pipeline will cross several public roads, including the A8 Glasgow Road. The water pipeline is about 9.935 km long.
- 2.3 The geological conditions over the pipeline route are quite complex due to the presence of fault-lines. Essentially, the bedrock is Hopetoun Member and Calders Member Sedimentary Rock Cycles of the Strathclyde Group Type with intrusions of igneous microgabbro and Binny Sandstone. The superficial deposits are till, alluvium and glaciofluvial ice contact deposits.

Legislative Background

- 3.1 The statutory framework for heritage in Scotland is outlined in the Town and Country Planning (Scotland) Act 1997, as amended by the Planning (Listed Buildings and Conservation Areas) (Scotland) Act, and The Ancient Monuments and Archaeological Areas Act 1979, both of which are modified by the Historic Environment (Amendment) (Scotland) Act (2011).

3.2 Cultural heritage resources consist of designated and non-designated sites, including individual monuments, related settings and the wider cultural landscape. Sites with statutory designations are defined in the Historic Environment Scotland Policy Statement 2016, and comprise:

- Scheduled Monuments;
- Listed Buildings;
- Conservation Areas;
- Historic Gardens and Designed Landscapes, and
- Historic Battlefields.

National Planning Legislation

3.3 The implications of the acts noted above regarding local government planning policy are described within Scottish Planning Policy (SPP) (2014), Historic Environment Scotland Policy Statement (HESPS) (2016) and Planning Advice Note 2/2011 (2011). SPP and HESPS deal specifically with planning policy in relation to heritage.

National Policy Guidelines

3.4 Three paragraphs of Scottish Planning Policy (SPP) 2014: Valuing the Historic Environment are pertinent to this assessment.

Listed Buildings

SPP paragraph 141 states: “Change to a listed building should be managed to protect its special interest while enabling it to remain in active use. Where planning permission and listed building consent are sought for development to, or affecting, a listed building, special regard must be given to the importance of preserving and enhancing the building, its setting and any features of special architectural or historic interest. The layout, design, materials, scale, siting and use of any development which will affect a listed building or its setting should be appropriate to the character and appearance of the building and setting. Listed buildings should be protected from demolition or other work that would adversely affect it or its setting.”

Gardens and Designed Landscapes

SPP paragraph 148 states: “Planning authorities should protect and, where appropriate, seek to enhance gardens and designed landscapes included in the Inventory of Gardens and Designed Landscapes and designed landscapes of regional and local importance.”

Archaeology and Other Historic Environment Assets

SPP paragraph 150 states: “Planning authorities should protect archaeological sites and monuments as an important, finite and non-renewable resource and preserve them in situ wherever possible. Where in situ preservation is not possible, planning authorities should, through the use of conditions or a legal obligation, ensure that developers undertake appropriate excavation, recording, analysis, publication and archiving before and/or during development. If archaeological discoveries are made, they should be reported to the planning authority to enable discussion on appropriate measures, such as inspection and recording.”

National Record of the Historic Environment and the local Historic Environment Record

3.5 Other cultural heritage and archaeological sites, not subject to other designations, are recorded within the National Record of the Historic Environment (NRHE) and the local Historic Environment Record (HER), and many such sites have not yet been identified or recorded. Such undesignated sites are frequently assigned to regional, local or lesser categories of significance. The regional or local importance of such a site is established on the basis of professional judgement, although

the criteria for identifying nationally important sites (as outlined in HESPS 2016 Annex 1) will often be referred to in making such judgements. Some sites are also, variously, classed as of lesser importance, unknown importance or other importance. Unknown or other importance usually refers to examples where insufficient information exists to assign importance.

Local Planning Policy and Guidelines

- 3.6 Local planning policy is defined in the West Lothian Local Plan (2009), The City of Edinburgh Local Development Plan (2016) and SESplan: Strategic Development Plan (2013).
- 3.7 The West Lothian Local Plan (2009) includes the following policies relating to cultural heritage that are pertinent to this assessment.

Policy HER 1

The council will work in conjunction with the public, national agencies, government departments, charitable trusts, funding bodies, owners and others in the preservation, appreciation, promotion and enhancement of the built environment.

Policy HER 2

The council will protect listed buildings and will have particular regard for their special architectural, historic features and, where appropriate, archaeological interest in considering proposals for their alteration, extension or change of use. In doing so, there will be a presumption against the partial or total demolition of a listed building.

In considering proposals for development within the vicinity of listed buildings, the council will have particular regard to the setting of listed buildings.

Policy HER 15

Significant archaeological sites will be protected from development which will have a detrimental effect on the sites or their settings.

Policy HER 16

Applicants will be required to provide an archaeological assessment in advance of determination of a planning application where the council considers this appropriate. Where preservation of archaeological remains proves unfeasible, archaeological investigation and recording to the highest professional standards will be required at the developer's expense, prior to the implementation of the development.

Policy HER 22

The special architectural and historic character and features of historic gardens and designed landscapes will be considered sympathetically and receive full protection in the consideration of proposals for development within or adjacent to them.

Policy HER 23

Where the special historical character and setting of any historic garden or designed landscape is under threat the area will be designated a conservation area and additional planning controls introduced as appropriate.

- 3.8 The City of Edinburgh Local Development Plan (2016) includes the following policies relating to cultural heritage that are pertinent to this assessment.

Policy Env 3 Listed Buildings - Setting

Development within the curtilage or affecting the setting of a listed building will be permitted

only if not detrimental to the architectural character, appearance or historic interest of the building, or to its setting.

Policy Env 7 Historic Gardens and Designed Landscapes

Development will only be permitted where there is no detrimental impact on the character of a site recorded in the Inventory of Gardens and Designed Landscapes, adverse effects on its setting or upon component features which contribute to its value. Elsewhere, adverse effects on historic landscape features should be minimised. Restoration of Inventory sites and other historic landscape features is encouraged.

Policy Env 8 Protection of Important Remains

Development will not be permitted which would:

- a) adversely affect a scheduled monument or other nationally important archaeological remains, or the integrity of their setting
- b) damage or destroy non-designated archaeological remains which the Council considers should be preserved in situ.

Policy Env 9 Development of Sites of Archaeological Significance

Planning permission will be granted for development on sites of known or suspected archaeological significance if it can be concluded from information derived from a desk-based assessment and, if requested by the Council, a field evaluation, that either:

- a) no significant archaeological features are likely to be affected by the development or
- b) any significant archaeological features will be preserved in situ and, if necessary, in an appropriate setting with provision for public access and interpretation or
- c) the benefits of allowing the proposed development outweigh the importance of preserving the remains in situ. The applicant will then be required to make provision for archaeological excavation, recording, and analysis, and publication of the results before development starts, all to be in accordance with a programme of works agreed with the Council.

- 3.9 SESplan (2013) is the Strategic Development Plan for Edinburgh. Detailed consideration of the historic environment falls beyond the remit of the Strategic Development Plan. However, it clearly adheres to SPP and one of the aims of Policy 1B is to “Ensure that there are no significant adverse impacts on the integrity of international and national built or cultural heritage sites in particular World Heritage Sites, Scheduled Ancient Monuments, Listed Buildings, Royal Parks and Sites listed in the Inventory of Gardens and Designed Landscapes”. The plan also aims to “Conserve and enhance the natural and built environment.” (SESplan 2013, 5).

Other Considerations

- 3.10 The proposed water pipeline route lies within two local authority areas. West Lothian Council is advised on cultural heritage matters by The West of Scotland Archaeology Service (WoSAS) and The City of Edinburgh Council is advised by The City of Edinburgh Council Archaeology Service (CECAS)

Aims and Objectives

- 4.1 The aims of this study were to assess the known or potential archaeological resource along the proposed route of the water pipeline and the likely impact of the proposal on the archaeological resource, and to recommend a strategy for mitigating the impact upon any known or potential archaeological remains.

4.2 The specific objectives of the assessment were:

- to identify any previously known archaeological monuments present within the proposed water pipeline route through a search of the National Record of the Historic Environment and, where accessible, the local Historic Environment Record;
- to identify any previously unknown archaeological sites through the examination of documentary and cartographic evidence;
- to assess the potential impact of the development on the archaeological resource, taking into account its varied significance; and
- to suggest appropriate mitigation measures for the protection of the archaeological resource or, where necessary, the investigation and recording of any sites likely to be affected by the development where preservation *in situ* cannot be achieved.

Methodology

5.1 The desk-based assessment examined the route of the proposed water pipeline (the Site) and a radius of approximately 100 m beyond its route (the buffer zone). Study of the surrounding landscape was necessary to establish the local archaeological and historical context, in order to provide a broader understanding of the historical development of the area and the potential for as-yet-unidentified archaeological remains within the Site.

5.2 The desk-based assessment of the proposed development site and buffer zone employed the following methodology:

- GIS data on Scheduled Monuments was obtained from Historic Environment Scotland (HES);
- GIS data on cultural heritage sites over the proposed water pipeline route was obtained from the National Record of the Historic Environment (NRHE), maintained by HES;
- Further GIS data was obtained from the West Lothian Historic Environment Record (HER), maintained by WoSAS;
- Pre-Ordnance Survey maps of the proposed development area, held by the National Library of Scotland (NLS), were identified and consulted on-line. Relevant maps, including manuscript maps, range in date from the seventeenth to the nineteenth centuries;
- First, second and subsequent editions of the Ordnance Survey maps of the area of interest, were identified and examined via NLS;
- Vertical aerial photographs were viewed online at the National Collection of Aerial Photographs website to identify any unknown sites or features of archaeological interest: Nine series of vertical photographs, ranging in date from 1945 to 1994 were viewed;
- Readily accessible primary and secondary historical sources were consulted for information relating to the area's historical past, including details relating to earlier land-use;
- A walkover survey of the proposed development area was carried out on 25th September 2017.

Baseline Assessment

6.1 The NRHE and West Lothian HER were checked on 21st September 2017, and GIS information from HES was downloaded on the same date. Any additions or alterations to these records made after that date have not been included in this assessment. The City of Edinburgh HER has no on-line facility.

- 6.2 There are two known cultural heritage sites on the route of the water pipeline, both of which are nationally significant Inventory Designed Landscapes. A further 17 cultural heritage sites and three areas of previous archaeological investigation are located within 100 m of the route (Figure 1). Two areas of previous archaeological investigation where significant evidence for prehistoric and Roman activity are located beyond the 100m buffer, but have been included in this assessment.
- 6.3 In the following assessment, the reference in parenthesis (CHS and number) refers to the cultural heritage sites noted on the site gazetteer at Appendix B and on Figure 1.

Prehistoric, Roman and early medieval sites (8000 BC – AD 600)

- 6.4 No known cultural heritage sites of prehistoric, Roman or early medieval date are located on the proposed route of the water pipeline.
- 6.5 There are two known cultural heritage sites of prehistoric date within the 100 m buffer surrounding the proposed water pipeline. An enclosure was recorded by NRHE at Milrig (CHS 15) and an enclosure and ring-ditch at Haugh (CHS 16). The NRHE gives no further detail of either of these prehistoric settlements and their extents are not known.
- 6.6 Significant prehistoric remains, consisting of a Neolithic trackway, a Bronze Age settlement and a large stone-built structure dating from the first millennium AD, were excavated at Edinburgh Park in the early 1990s. These remains are located at the east end of the proposed water pipeline (Moloney and Lawson 2006).
- 6.7 In addition, archaeological remains spanning the period from the Mid-Bronze Age to the medieval period were uncovered and excavated at Newbridge. These remains comprised settlements of Mid-Bronze Age and pre-Roman Iron Age date, the possible remnants of a barrow cemetery and, perhaps most significantly, a section of a Roman road that may represent the westward extension of Dere Street, linking Inveresk and Carriden forts (Engl and Dunbar, 2016).
- 6.8 A Roman milestone (CHS 12) is recorded within the 100 m buffer surrounding the proposed water pipeline. There is some debate about the precise location where the milestone was found, although it was observed at Ingliston House in the late seventeenth century.
- 6.9 There is evidence for Roman activity within the wider area surrounding the water pipeline. A possible roman temporary camp (NRHE: NT17SE 23) was recorded by aerial photography in 1980. The camp is about 330 m north of the water pipeline route.

Medieval sites (AD 600 – AD 1600)

- 6.10 There are no known cultural heritage sites of medieval date on the route of the water pipeline or within the 100 m buffer.
- 6.11 Medieval activity is known in the wider area around the water pipeline, with possible field systems (NRHE NT17SW 67, NT17SW 292 and NT17SW 240) and field boundaries (NRHE NT17SW 67) uncovered during archaeological excavations in the locale of Newbridge.

Post medieval and modern sites (1600 to present)

- 6.12 There are two known cultural heritage site of post-medieval or modern date on the proposed route of the water pipeline, and a further 15 within the surrounding 100 m buffer.
- 6.13 The earliest maps consulted recorded very little useful information about the Site or the surrounding area (Pont 1583; Adair, 1682 and 1684; Adair and Cooper 1735 and 1737), merely noting the presence of settlements and structures such as Ingliston, Newliston, Ratho and Over Gogar.
- 6.14 The most useful of the earlier maps is Roy's mid-eighteenth century *Military Survey of Scotland* (Figure 2) which showed that the land use over the proposed pipeline route was almost

exclusively agricultural. The exception to this was the boggy ground to the immediate east of what is now the M9, an area where relict water courses of the River Almond previously flowed. This map also depicted the road from Broxburn on the north side of the Brox Burn, and the extensive formal gardens on the north side of Newliston House (part of CHS 14).



Figure 2: Excerpt from Roy's 1747-55 Military Survey of Scotland. Reproduced by permission of the Trustees of The National Library of Scotland.

- 6.15 Laurie's 1763 map recorded Norton Mains (CHS 5 and CHS 6) and his 1786 map showed that the agricultural land had been improved, which corresponds to the written evidence provided in the Old Statistical Account of Uphall parish. This document noted that before about 1768, agriculture was practiced via the runrig system (as recorded on Roy's map) where unenclosed land was cultivated using rig and furrow (Anon. 1791-99, 543-544).
- 6.16 By 1816, Millburn Tower (part of CHS 2) and the circular lodge house (CHS 1) had been built, and an avenue of trees had been planted at the eastern limit of the proposed pipeline route (Knox 1816). The later pre-Ordnance Survey maps consulted for this assessment did not record any changes in land-use over the proposed pipeline route.
- 6.17 The first edition of the Ordnance Survey maps (Figure 3) showed that Ashley House Lodge (CHS 4) and the Glasgow to Edinburgh Railway, had been constructed by 1853. Four elements of the railway are located within the 100 m buffer surrounding the water pipeline; Roddinglaw railway bridge (CHS 3), Norton Mains railway bridge (CHS 7), Norton Hotel railway bridge (CHS 8) and Broxburn Viaduct (CHS 17). Despite the construction of the railway, the landscape retained its rural character and the land-use over the pipeline route remained agricultural.

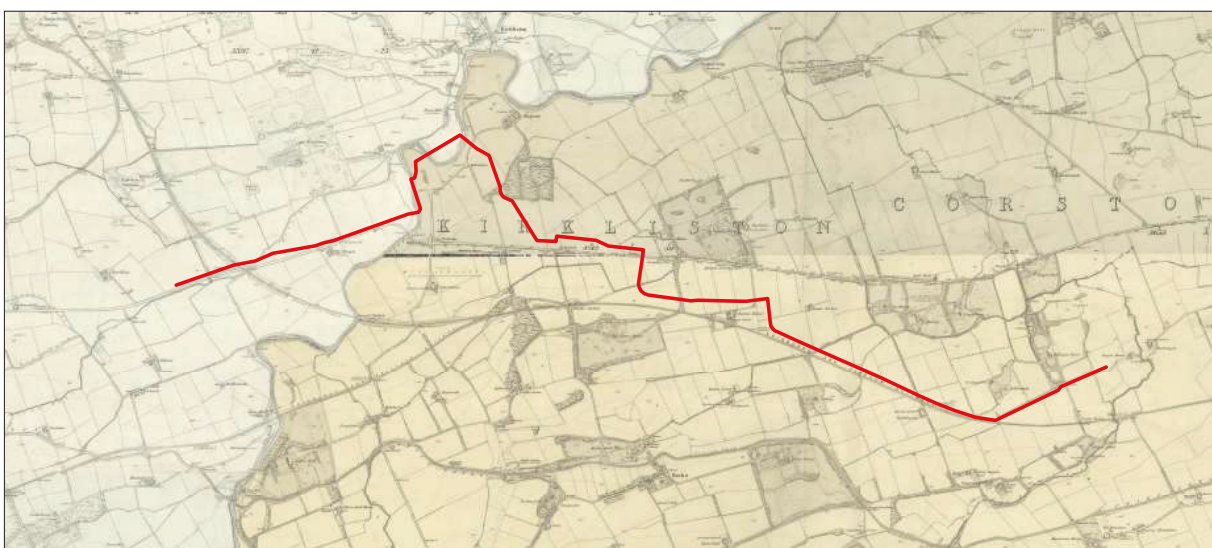


Figure 3: Excerpts from the 1853 Ordnance Survey 6" maps Edinburgh Sheets 1 and 5 and 1856 6" map Linlithgowshire Sheet 6. Reproduced by permission of the Trustees of The National Library of Scotland.

- 6.18 By the late nineteenth century, Newbridge Primary School (CHS 13) and Burnhall (CHS 9) had been built (*Edinburghshire Sheet II.SW*).
- 6.19 None of the historic maps consulted for this assessment recorded 104-118 Glasgow Road (CHS 10), the refuse disposal site and boundary hedge at East Mains industrial estate (CHS 18 and CHS 19), and the whisky bottling plant (CHS 20), all of which are modern cultural heritage sites.

Aerial Photographs

- 6.20 Nine sets of vertical aerial photographs from the second half of the twentieth century were examined for this assessment (Appendix A).
- 6.21 The aerial photographs generally showed that the majority of the water pipeline route remained in agricultural usage throughout the second half of the twentieth century.
- 6.22 No previously unrecorded cultural heritage sites were noted on the aerial photographs consulted for this assessment.

Previous Archaeological Investigations

- 6.23 Two previous archaeological investigations have been carried out on the proposed route of the water pipeline. A further one is recorded within the surrounding 100 m buffer, and two areas of investigation that uncovered significant cultural heritage remains lie just outwith the 100 m buffer.
- 6.24 A desk-based assessment (CHS 21) carried out over an extensive area at Broxburn identified 78 cultural heritage sites within 1 km of a proposed gas pipe route. The sites ranged in date from Mesolithic to modern. A subsequent phase of archaeological works on the gas pipeline (CHS 22) excavated and recorded the remains of late nineteenth century shale miner's cottages, a large pit containing Beaker pottery from multiple vessels and some fragments of cremated bone, and a cluster of possible pits of unknown date (Moore 2010).
- 6.25 An archaeological watching brief at Glasgow Road (CHS 11) uncovered no features or deposits of archaeological significance. The extent of the area subject to the watching brief is not recorded by NRHE.

Walkover Survey

- 6.26 A walkover survey was carried out over the proposed development area on 25th September in variable weather conditions.
- 6.27 The walkover survey found that the proposed water pipeline route crossed mainly through agricultural land although and that, while the land to the north of the A8 and A89 roads was flat and low-lying, the ground rose on the south side of the A8 road (Plate 1).



Plate 1: General view of the higher ground to the east of Ratho Station from south-east.



Plate 2: Water pipeline route on the east side of the M9 motorway viewed from south-east.

- 6.28 On the east side of the M9 motorway, the ground was found to be quite wet and, although this may have been due to the wet weather conditions, an ox-bow meander of the River Almond

previously flowed through this land (Plate 2). This section of the M9 motorway sits on an elevated bank, and the construction of the bank is very likely to have caused significant disturbance to the topsoil and subsoil deposits in this area.

- 6.29 The survey noted that the section of the Glasgow to Edinburgh railway line adjacent to the proposed water pipeline also lies on an elevated bank, construction of which is very likely to have resulted in significant disturbance to the topsoil and subsoil deposits.
- 6.30 No previously unrecorded cultural heritage remains were found during the walkover survey.

Discussion

Direct impacts

- 7.1 The assessment indicates that two known cultural heritage sites are located on the proposed route of the water pipeline. These are Millburn Tower Inventory Designed Landscape (CHS 2) and Newliston Inventory Designed Landscape (CHS 14), both of which are of national significance.
- 7.2 At Millburn Tower IGDL, the water pipeline would cross a small grassed area to the south of Millburn Tower Lodge (CHS 1) which, although within the IGDL boundary, is outside the boundary wall of Millburn Estate. The ground disturbance associated with the proposed water pipeline would constitute a direct impact upon the IGDL. This impact would be of a temporary nature, and would cease after ground re-instatement. The HES listing for Millburn Tower IGDL notes that it has “some” archaeological value, adding that this value “derives mainly from the potential for any future survey or investigation to reveal further information about the landscape over time”.
- 7.3 Those areas of Newliston IGDL that would be directly affected by the proposed water pipeline are agricultural fields that are not specifically included in the HES listing for the IGDL. HES has not assessed the archaeological importance of Newliston IGDL. Although the ground disturbance associated with the proposed water pipeline would constitute a direct impact upon the IGDL, this would be of a temporary nature, and would cease after ground re-instatement.
- 7.4 Although the remainder of the proposed water pipeline is not considered especially archaeologically sensitive, the pipeline would cross an historically agricultural landscape, and groundbreaking works may have a potential direct impact upon unrecorded archaeological remains that may lie buried beneath relatively undisturbed areas of the proposed development. This could include the boggy land adjacent to the M9 motorway and sliproad, where there is some potential for the survival of more ephemeral cultural heritage remains such as relict crossing points or fish traps. In addition, there are known prehistoric, medieval and Roman remains within the vicinity of the pipeline, which increases the potential for the discovery of hitherto unrecorded cultural heritage remains, features and deposits.

Potential indirect impacts

- 7.5 The proposed water pipeline could potentially have an indirect impact on the settings of two IGDLs, one category A Listed Building, one category B Listed Building and four category C Listed Buildings located within the 100 m buffer. All of these cultural heritage sites were visited during the walkover survey, and the potential effect of the installation of the water pipeline was assessed.
- 7.6 Intervening woodland and/or buildings would prevent intervisibility between the proposed water pipeline and both IGDLs and between the proposed water pipeline and four of the Listed Buildings. Any noise, dust or vibration from the groundworks would be of a temporary nature, lasting only for the duration of groundworks. Consequently, the proposal would not result in any significant indirect effect upon the settings of Millburn Tower Inventory Garden & Designed Landscape (CHS 2), Newliston Inventory Garden & Designed Landscape (CHS 14), the category C Listed Ashley House Lodge (CHS 4), Norton Mains Farmhouse (CHS 5) and Norton Mains Steading (CHS 6) or the category B Listed Norton Hotel Railway Bridge (CHS 8).

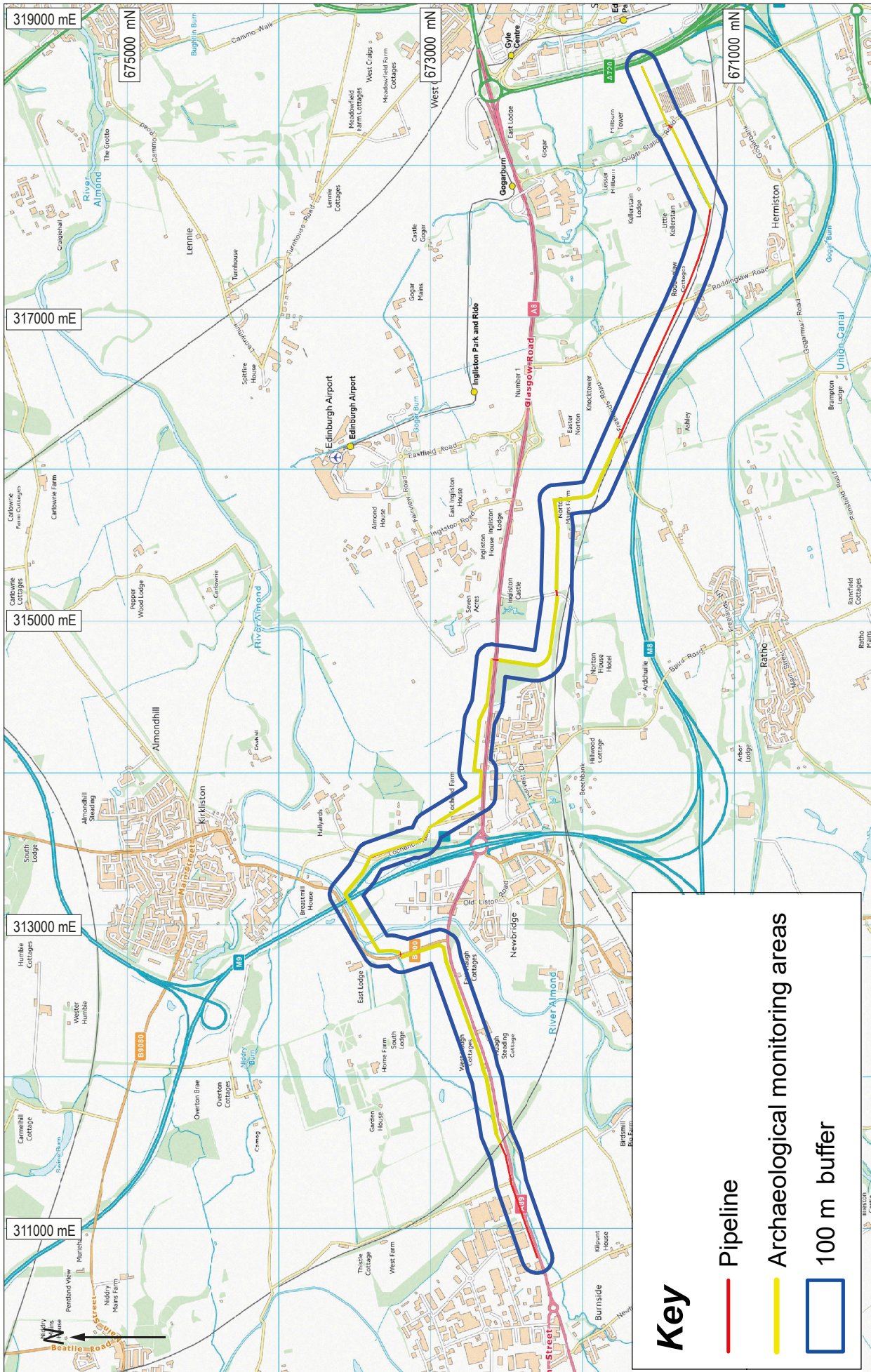
- 7.7 The assessment found that there would be an indirect effect on the setting of Millburn Tower Lodge (CHS 1), but that this would be of a temporary nature for the duration of groundworks. Restoration of the ground to the south of the lodge would result in no residual indirect effect of the setting of this category B Listed Building.
- 7.8 The proposal would result in an indirect effect on the setting of the category A Listed Broxburn Viaduct (CHS 17). As was the case with Millburn Tower Lodge, this effect would be temporary, lasting for the duration of groundworks. Following restoration of the ground, there would be no residual indirect effect of the setting of the railway viaduct.

Conclusions

- 8.1 The cultural heritage assessment has found that two nationally important cultural heritage sites are located directly on the proposed route of the water pipeline. These are Millburn Tower IGDL (CHS 2) and Newliston IGDL (CHS 14). Those sections of the water pipeline within the two IGDLs would have no significant direct or indirect effect on these designated cultural heritage sites.
- 8.2 Following re-instatement, the proposal would have no residual indirect effect on the settings of the following six Listed Buildings: Millburn Tower Lodge CHS 1, Ashley House Lodge CHS 4, Norton Mains Farmhouse CHS 5, Norton Mains Steading CHS 6, Norton Hotel Railway Bridge CHS 8 and Broxburn Viaduct CHS 17.
- 8.3 The proposed water pipeline would largely cross land that has been utilised for agriculture since at least the mid-eighteenth century and, as such, has seen relatively little in the way of development. Given that most of the proposed water pipeline route is and has been agricultural land, and that significant prehistoric, medieval and Roman remains are known within the vicinity of the Site, GUARD Archaeology Limited would advise that the water pipeline should be subject to an archaeological watching brief.
- 8.4 However, there are three areas on the water pipeline where development has taken place and where sub-surface deposits will have been significantly disturbed. These are the land adjacent to the Glasgow to Edinburgh railway line and to the A8 and A89 public roads. The railway line sits atop a raised bank where considerable ground disturbance would have taken place in constructing the banks. Similarly, the construction and later widening of the A8 and A89 roads will have disturbed the ground to either side of these highways, potentially removing or damaging any sub-surface cultural heritage remains. We would recommend that these three areas be exempt from archaeological monitoring (Figure 4).

Archaeological Monitoring of Test Pits

- 9.1 GUARD Archaeology Limited carried out an archaeological watching brief during the excavation of test pits on the proposed pipe route. Between 5th and 19th October, a total of 34 test pits were monitored, including one that was moved during its excavation due to water ingress. The monitoring was carried out by Alan Hunter Blair and Juan Ignacio de Vicente Ojeda.
- 9.2 The test pit excavations uncovered a stone drain in test pit 4 (Plate 3) and a stone culvert in test pit 12 (Plate 4). These features are not considered to be significant.
- 9.3 A full data structure report on the results archaeological monitoring is forthcoming.



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0 2.5 km

Figure 4: Revised areas recommended for archaeological monitoring.



Plate 3: Stone drain in TP4 viewed from south-west.



Plate 4: Stone culvert in TP12 viewed from south-east.

Technical Information

- 10.1 The paper and digital archive for the desk-based assessment will be lodged with the National Record of the Historic Environment. The list of archive material can be found at Appendix C.
- 10.2 As far as can be ascertained, there are no existing heritage or archaeological site management plans in operation at the proposed water pipeline.
- 10.3 All elements of the assessment have been undertaken in line with the following policies and guidelines of the Chartered Institute for Archaeologists of which GUARD Archaeology Ltd is a Registered Organisation.
 - Code of Conduct (2014);
 - Standards and Guidance for commissioning work on, or providing consultancy advice on, archaeology and the historic environment (2014), and
 - Standard and Guidance for historic environment desk-based assessment (2017).
- 10.4 The Chartered Institute for Archaeologists requires that information pertaining to archaeological assessments is made publicly available via the OASIS project. The project aims to provide an on-line index to otherwise inaccessible archaeological grey literature, such as this desk-based assessment. The online OASIS form for this project (OASIS Reference: guardarc1- 297067) has been completed. Once the Planning Application has been determined by West Lothian and the City of Edinburgh Councils, and with the consent of Scottish Water, the desk-based assessment will be uploaded to OASIS. The West of Scotland Archaeology Service and the City of Edinburgh Council Archaeology Service will then validate the OASIS form thus placing the information into the public domain. OASIS can be accessed at <http://ads.ahds.ac.uk/project/oasis/>

**Bathgate Trunk Main:
Desk-based Cultural Heritage Assessment**

Section 2: Appendices



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Appendices

Appendix A: References

Documentary Sources Consulted

Anon 1791-99 'Parish of Uphall' in The Old Statistical Account Vol.VI, 543-545. Accessed 27/9/17. Available at <http://stataccscot.edina.ac.uk>

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Vertical aerial photograph sources

Sortie	Date	Frame
106G/Scot/UK/0014	15/4/46	7144, 7145
58/4488	23/6/61	F21/0082-0084
OS/65/0121	29/6/65	0008, 0012
MER/091/71	1/6/71	0004
FSL/7711/02	6/6/77	0204
ASS/51888	14/6/88	0009-0012
AF/91/0067	8/5/91	2299, 2304, 2314
AF/93/0064	29/4/93	3508
AF/94/0013	12/2/94	3421

Appendix B: Gazetteer of Cultural Heritage Sites

CHS No: 1
 Name: Millburn Tower, South Lodge
 NGR: NT 17255 71465
 NRHE No: NT17SE 47
 HER No: -
 Significance: Regional: Category B Listed Building LB27313
 Description: Early nineteenth century circular plan lodge adjoining a modern cottage to the west.

CHS No: 2
 Name: Millburn Tower Inventory Designed Landscape
 NGR: NT 17112 71787 (centred)
 NRHE No: -
 HER No: -
 Significance: National: Inventory Designed Landscape
 Description: Millburn Tower is a significant early 19th-century informal designed landscape. Its importance lies in the historic horticultural collection including American and continental specimens. These specimens, though now mostly gone, were gathered and cultivated by the first owners, Sir Robert and Lady Liston. This landscape is also significant for the wealth of historical data about the formation of the collection, for its design by the landscape theorist and garden designer George Isham Parkyns (only one of two in Britain connected to his name), and for the visitors it attracted in the early 19th century.

CHS No: 3
 Name: Rodddinglaw Road Railway Bridge
 NGR: NT 1600 7140
 NRHE No: NT17SE 381
 HER No: -
 Significance: Lesser
 Description: This railway bridge was included in a photographic building survey carried out on a series of overbridges that were subject to demolition or alteration as part of the

Airdrie to Bathgate Railway and Linked Improvement works. The redevelopment work took place on a live railway and as a result CFA staff were not permitted to carry out the photographic survey.

CHS No: 4
 Name: Ashley House Lodge
 NGR: NT 15176 71713
 NRHE No: NT17SE 39
 HER No: -
 Significance: Local: Category C Listed Building LB26775
 Description: A later nineteenth century T-plan lodge to Ashley House.

CHS No: 5
 Name: Norton Mains Farmhouse
 NGR: NT 14607 72066
 NRHE No: NT17SW 60
 HER No: -
 Significance: Local: Category C Listed Building LB27229
 Description: Norton Mains and steading were part of the Norton estates and date from the earlier to mid-nineteenth century. The farmhouse is shown on the 1st edition map, and has some later nineteenth century alterations.

CHS No: 6
 Name: Norton Mains Steading
 NGR: NT 14570 72065
 NRHE No: NT17SW 60.01
 HER No: -
 Significance: Local: Category C Listed Building LB27229
 Description: The steading dates from the early nineteenth century and has some later nineteenth century additions and alterations. The steading has a quadrangular plan around a central courtyard.

CHS No: 7
 Name: Norton Mains railway bridge
 NGR: NT 1440 7210
 NRHE No: NT17SW 256
 HER No: -
 Significance: Lesser
 Description: This railway bridge was included in a photographic building survey carried out on a series of overbridges that were subject to demolition or alteration as part of the Airdrie to Bathgate Railway and Linked Improvement works. The redevelopment work took place on a live railway and as a result CFA staff were not permitted to carry out the photographic survey.

- CHS No: 8
Name: Norton Hotel Railway Bridge
NGR: NT 14152 72105
NRHE No: NT17SW 55
HER No: -
Significance: Regional: Category B Listed Building LB27196
Description: The Edinburgh and Glasgow Railway was opened in 1842, by which date this bridge must have been in situ. It is a single span Tudor/Gothic style bridge that carries the railway over the main drive of Norton House.
- CHS No: 9
Name: Burnhall, 91-93 Glasgow Road, Ratho Station
NGR: NT 1321 7264
NRHE No: NT17SW 155
HER No: -
Significance: Lesser
Description: None given on NRHE.
- CHS No: 10
Name: 104-118 Glasgow Road, Ratho Station
NGR: NT 1323 7260
NRHE No: NT17SW 194
HER No: -
Significance: Lesser
Description: None given on NRHE.
- CHS No: 11
Name: Glasgow Road, archaeological watching brief
NGR: NT 1308 7260
NRHE No: NT17SW 254
HER No: -
Significance: Lesser
Description: A watching brief was carried out in July 2008 at this location during groundworks for a hotel/office development. No features or deposits of archaeological significance were recorded.
- CHS No: 12
Name: Ingliston, Roman milestone (former location of)
NGR: NT 130 727
NRHE No: NT17SW 22
HER No: -

Significance: Unknown (milestone not in situ)
 Description: Part of a cylindrical Roman milestone was recorded as seen at Ingliston House in 1697. Another milestone fragment has been recognised as the upper part of this stone. The inscription on the milestone recorded that it had been erected during the third consulship of Antoninus Pius (ca. AD 140). Sibbald's (1707) account indicates that this milestone was found near Ingliston and not far from the Newbridge standing stones. After a study of the terrain, Maxwell considers that the east/west Roman road may well have followed the ridge of ground which carries these stones, and that the Roman milestone may once have stood within a quarter of a mile east of them (i.e. in the area of NT 130 727).

CHS No: 13
 Name: Newbridge Primary School, Kirkliston

NGR: NT 12761 72680

NRHE No: NT17SW 162

HER No: -

Significance: Lesser

Description: None given on NRHE

CHS No: 14
 Name: Newliston Inventory Designed Landscape

NGR: NT 10913 73522

NRHE No: -

HER No: -

Significance: National: Inventory Garden and Designed Landscape GDL00298

Description: Dating back to a plan by William Adam made in 1725, the structural layout of the house, gardens, parkland and woodland can still be seen today. The house was one of the last country houses designed by Robert Adam and is category A listed. It has outstanding Historical value with good documentary evidence and associations with the 2nd Lord Stair, and William & Robert Adam. The archaeological value of Newliston has not been assessed by HES.

CHS No: 15
 Name: Milrig, possible enclosure

NGR: NT 118 732

NRHE No: NT17SW 170

HER No: -

Significance: Local

Description: None given on NRHE

CHS No: 16
 Name: Haugh, enclosure and ring-ditch

NGR: NT 114 727

NRHE No:	NT17SW 48
HER No:	-
Significance:	Local
Description:	None given on NRHE
CHS No:	17
Name:	Broxburn Viaduct, Kirkliston
NGR:	NT 10578 72525
NRHE No:	NT17SW 72
HER No:	WoSAS Site ID 54432
Significance:	National: Category A Listed Building LB7427
Description:	This viaduct was built in 1842 and has seven segmental arches.
CHS No:	18
Name:	East Mains, refuse disposal site
NGR:	NT 10500 72520
NRHE No:	-
HER No:	WoSAS Site ID 63046
Significance:	Lesser
Description:	This site was identified during the course of a desk-based assessment and walkover survey conducted in relation to the erection of a proposed mixed-use development on land at East Mains Industrial Estate, Broxburn, West Lothian.
CHS No:	19
Name:	East Mains, boundary hedge
NGR:	NT 10450 72480
NRHE No:	WoSAS Site ID 63045
HER No:	-
Significance:	Lesser
Description:	This site was identified during the course of a desk-based assessment and walkover survey conducted in relation to the erection of a proposed mixed-use development on land at East Mains Industrial Estate, Broxburn, West Lothian. It comprises an existing hawthorn hedging, possibly on the line of a historic boundary.
CHS No:	20
Name:	Whisky Bottling Plant, Broxburn
NGR:	NT 1013 7255
NRHE No:	NT17SW 96
HER No:	WoSAS Site ID 18406
Significance:	Lesser
Description:	Known as Bell's Whisky Bottling Plant, this site was identified during the course of a

desk-based assessment and field reconnaissance survey of the route of a proposed pipeline from Broxburn, West Lothian, to Humbie Farm, City of Edinburgh.

CHS No: 21

Name: Broxburn to Humbie Farm Gas Pipeline Reinforcement

NGR: -

NRHE No: -

HER No: WoSAS Event 3784

Significance: Lesser

Description: A desk-based assessment and field reconnaissance survey made of the route of a proposed pipeline from Broxburn, West Lothian, to Humbie Farm, City of Edinburgh identified 78 sites within 1km of the proposed pipe route. The sites ranged in date from Mesolithic to modern.

CHS No: 22

Name: Broxburn to Humbie Farm Gas Pipeline Reinforcement

NGR: -

NRHE No: -

HER No: WoSAS Event 4020

Significance: Local

Description: An archaeological watching brief carried out during groundworks identified three sites which were excavated and recorded. Site 1 was the badly disturbed remains of late nineteenth century shale miner's cottages. Site 2 was a cluster of possible pits of unknown date. Site 3 was the location of a large pit containing Beaker pottery from multiple vessels and some fragments of cremated bone. The feature had been substantially disturbed by the incorporation of a field drain in relatively modern times. A series of isolated features were also uncovered and recorded during the watching brief, which were largely attributed to farming practice and land management in the post-medieval period.

Appendix C: GUARD Archaeology Archive material

	Description	Format	Number
Paper archive	Photographic record	A4	1
Digital archive	Digital photographs	JPEG	13
	Report	PDF	1
	Shapefiles (ArcMap)	.cpg	1
		.dbf	1
		.prj	1
		.sbn	1
		.shp	2
		.shx	1

GUARD Archaeology Limited
52 Elderpark Workspace
100 Elderpark Street
Glasgow
G51 3TR

Tel: 0141 445 8800

Fax: 0141 445 3222

email: info@guard-archaeology.co.uk



www.guard-archaeology.co.uk