

TRANSECT THROUGH TIME

THE ARCHAEOLOGICAL LANDSCAPE
OF THE
SHELL NORTH WESTERN ETHYLENE PIPELINE

(ENGLISH SECTION)

Janet Lambert

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Janet Lambert, Rachel Newman, Adrian Olivier
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Val Tomlin, Ruth Parkin

To Robin and Noël

Front cover: Lune gorge, Tebay, Cumbria
Back cover: Tombstone of *Aelia Senticia*

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is the publication series of Lancaster University Archaeological Unit. The series covers the full range of archaeological work undertaken by the Unit and associated organisations.

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Abbreviations and conventions

AP	Aerial photograph
CFHS	Cumbria Family History Society
CRO	Cumbria Record Office
DOE	Department of the Environment
EC	European Community
GPS	Global Positioning System
LRO	Lancashire Record Office
LUAU	Lancaster University Archaeological Unit
NGR	National Grid Reference
NWEP	North Western Ethylene Pipeline
NWWS	North West Wetlands Survey
OD	Ordnance Datum
OE	Old English
ON	Old Norse
OS	Ordnance Survey
PGM	Permanent Ground Marker
PRO	Public Record Office
RCHAMS	Royal Commission on the Ancient and Historic Monuments of Scotland
RCHM (E)	Royal Commission on the Historical Monuments of England
SCUK	Shell Chemicals UK Ltd
SM	Scheduled Monument
SMR	Sites and Monuments Record

Throughout the text, sites on the pipeline route are referred to by their assigned numbers in the gazetteer, and are printed in bold, thus: **825**. Excavation context numbers are consistently referred to by the use of italics, thus: *103*. Object record numbers in the excavation reports correlate to the archive numbers in the finds catalogues (*on microfiche*), and are expressed as plain numbers, thus: 10.

Abstract

In 1988 the Lancaster University Archaeological Unit was commissioned by Shell Chemicals UK Ltd to carry out a phased archaeological assessment of the English sector of a proposed pipeline route. The North Western Ethylene Pipeline was designed to carry ethylene from Grangemouth in Scotland to the existing Shell refinery facilities at Stanlow in Cheshire.

The archaeological studies commenced with desktop assessments in 1988–1989, followed by intensive fieldwork in 1990–1991, post-excavation analysis in 1992, and a written synthesis in 1993–1994. The earlier phases of work comprised archive research, fieldwalking, and aerial photography, and further work at selected sites included topographical survey, geophysical survey, trial trenching, and excavation in several key areas. Construction of the pipeline took place between May and November 1991, and was monitored by archaeological line inspectors conducting a continuous watching brief, supported by a rapid response team equipped to survey or excavate features discovered during construction.

The pipeline route traversed all five counties of North West England, but the main thrust of the work programme focused on Cumbria, where four sites of local, regional, and national significance were excavated prior to construction, at Hadrian's Wall, Fremington, near Penrith, Powsons, and Low Borrowbridge, both in the Lune gorge south of Tebay. In addition, the intersections with two Roman roads were recorded during pipeline construction, at the Stanegate, south of Hadrian's Wall, and the main road north from Ribchester to Carlisle, at Sproatgill near Orton.

This monograph presents a chronological account of the phased work programme and techniques employed (*Chapter 1*), describes all the sites briefly in relation to the topography of the pipeline route (*Chapter 2*), and provides a more detailed study of the Lune gorge, an area substantially affected by the pipeline and other major routeways (*Chapter 3*). There are full reports of the excavations at Hadrian's Wall (*Chapter 4*), the Roman cemetery at Low Borrowbridge (*Chapter 5*), an early medieval settlement at Fremington (*Chapter 6*), and a medieval farmstead at Powsons (*Chapter 7*).

Contributors

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In the course of a six-year project, staffing and structural changes are inevitable. John Williams set up the project in the summer of 1988, and managed it for a year, until he left the Cumbria and Lancashire Archaeological Unit (as LUAU was then known) to become the county archaeologist for Kent. His successor, Adrian Olivier, maintained overall responsibility for the project until he in turn departed, in December 1993, to become manager of the Central Archaeology Service at English Heritage. Project management was then taken over by Rachel Newman, assistant director of LUAU. The initial assessment stage of the NWEF project, in 1988–1989, was directed by Peter Iles, and the first phase of fieldwork was co-directed, in the spring of 1990, by Jamie Quartermaine and Janet Lambert. From May 1990 until publication the project was directed by Janet Lambert. The two seasons of trial excavations, in 1990–91, were directed by Katharine Buxton, and the excavation site directors in 1991 were Denise Drury (Hadrian's Wall), Tove Oliver (Fremington), and Nick Hair (Powsons and Low Borrowbridge). The post-excavation programme was co-ordinated by Rachel Newman. The success of the project relied on the 60 members of LUAU staff involved, and remembered with thanks are the survey and excavation staff: Austin Ainsworth, Glyn Barrett, Denise Buckley, Robert Chester, Shona Connolly, Judith Driver, Colin Forcey, Robert Foreman, Steven Haig, Richard Harrison, David Hodgkinson, David Johnson, Philip Kibberd, Robin Lambert, Ian Miller, Michael Peace, Sarah Peacock, Fiona Pitt, Peter Redmayne, Matthew Robinson, Ian Scott, Trevor Simmons, Jonathan Smith, Jenny Swift, Andrew Thompson, Patrick Tostevin, Michael Wane, Angela Whitworth, and Chris Wild; Prince Chitwood, Denise Drury, and Mark Leah, line inspectors; Mick Krupa and Jamie Quartermaine, surveyors; Helen Quartermaine, archivist; Chris Cox, aerial photographer; Malcolm Harrison, photographic plotting and interpretation; Ruth Parkin, desktop publishing; Sonia Ely and Richard Harrison, gazetteer compilation and office administration; Robert Middleton and Colin Wells, North West Wetlands Survey; Peter Iles and John Dodds, computer management; and Michael Trueman, industrial archaeologist.

The principal author of this monograph is Janet Lambert, the co-authors of the excavation reports for Fremington, Low Borrowbridge, and Powsons are Tove Oliver, Rachel Newman, Christine Howard-Davis, and Nick Hair, and contributors to the Hadrian's Wall report are John Williams, Philip Howard, Paul Gibbons, and Denise Drury. David Shotton provided the section on the Romans in the Lune Valley, and reports on the tombstone and Roman coins. Other specialist contributors were Sally Cottam and Louise Hird (Roman pottery), Jacqueline I McKinley (human bone) Deirdre Winstanley (animal bone), and Jacqueline P Huntley (palaeoenvironmental analysis).

Aerial photographs are by Bob Bewley (2:16, 3:8, 5:1) and Chris Cox (7:8). Photographs of Fremington are by LUAU (6:8, 6:11); the rest are by Janet Lambert, who also produced the maps in Chapters 2 and 3 using Micrografx Designer 4.1. Site plans and historic maps were prepared for publication by Richard Danks, and finds illustrations are by Peter Lee. Figures 2:2, 2:5, 2:7, 2:8, 2:9, 2:13, 3:12, 4:1, 7:2 (Carlisle), and 2:14, 2:19, 2:22, 2:24, 2:25, 3:13, 3:14, 3:15, 3:18, 3:19, 3:20, 3:22, 3:24, 7:3, 7:4, 7:5, 7:6 (Kendal) are reproduced by permission from the Cumbria Record Office, and Figures 2:28, 2:32, 2:33, 2:35 by permission from the Lancashire Record Office; Crown copyright map extracts are reproduced by courtesy of the Ordnance Survey.

Foreword

The North Western Ethylene Pipeline was conceived as a solution to an ethylene feedstock supply problem. By safely transporting this versatile chemical from operations in Scotland to our manufacturing plants in the North West of England, we were able to underpin our own future development plans and play an integral role in stabilising the UK chemical industry.

However, as well as the commercial value of this extensive project, it also serves to demonstrate my company's attitude to environmental management.

Before beginning the construction of this 411km long pipeline, an extensive environmental assessment took place. As well as defining our intentions to the government's Department of Trade and Industry, that document gave us a baseline of data from which to plan construction and manage effective reinstatement.

The statement covers many aspects of environmental impact including ecology, agriculture, geology, geography, and archaeology.

By rerouting the pipeline wherever possible and approaching the crossing of certain Scheduled Monuments with sensitivity, it has been possible to avoid having a significant detrimental effect on the archaeology of the North West and Border counties. Indeed, aerial photography, geophysical surveys, trial and detailed excavations have added to the understanding of the area's archaeological heritage.

In particular, careful excavation, carried out with the help of consultants and experts from the Lancaster University Archaeological Unit, has revealed new and important evidence regarding the early colonisation of land traversed by the pipeline. The body of information that has been investigated and collated by LUAU clearly indicates that a significant contribution has been made to the archaeological record for the UK.

I feel that this document prepared by LUAU is a valuable by-product of the Shell North Western Ethylene Pipeline project.

W A Colquhoun

General Manager, Shell Chemicals UK Ltd

Introduction

In July 1988 the Lancaster University Archaeological Unit began the phased archaeological assessment of a proposed pipeline route on behalf of Shell Chemicals UK Ltd (SCUK). The North Western Ethylene Pipeline was designed to carry ethylene from Grangemouth, on the Firth of Forth west of Edinburgh, to the existing Shell refinery facilities at Stanlow, on the River Mersey in Cheshire (Fig 0:1). North of the border, the Scottish section of the route was evaluated by staff of the Centre for Field Archaeology at the University of Edinburgh. The LUAU studies were concerned entirely with the 253km of the pipeline route in the English counties of Cumbria, Lancashire, Merseyside, Greater Manchester, and Cheshire.

The detailed archaeological management policy originally put forward by LUAU was subsequently adapted for incorporation in SCUK's Environmental Statement, as part of its planning application. The initial desk-top assessment, in 1988-1989, formed part of an overall environmental impact assessment, encompassing also the geology, hydrology, ecology, and landuse of the proposed route, as prescribed by EC regulations. The results of these studies imposed constraints which were taken into account in the routing of the pipeline, and SCUK then published an Environmental Statement, in September 1989, in support of their application to the Department of Energy for Pipeline Construction Authorisation (SCUK 1989). Following the identification of statutory archaeological constraints for the purpose of the planning application, LUAU was requested to design a project for the further investigation and recording of sites and areas of archaeological interest along the chosen route.

The pipeline route passes through one of the archaeologically lesser known areas of England, providing a cross-section of many of the widely varying landscapes to be found in the North West, and affecting, or passing close to, a number of important archaeological sites. The aim of the study was to preserve sites, wherever possible, by avoidance; where this was not feasible, a management plan was devised to mitigate the impact of construction on each site affected. Approximately 500 sites were evaluated, in a structured process designed to identify and record every site at a level appropriate to its archaeological value. This major investigation of a corridor 253km long consisted of a review of existing records, field validation, aerial photography, and selective survey or excavation where necessary, while a watching brief was maintained throughout pipeline construction. The fieldwork was accompanied by a synthesis of all the information into a computerised database and gazetteer, and a series of 17 progress reports to SCUK.

This transect through North West England, from the Solway to the Mersey, crossed upland areas of marginal agricultural value, rich arable lowlands, a busy communications corridor, bleak moorlands, and relatively densely populated river valleys and estuaries. The greatest contrast in landscapes lay between the remote Westmorland fells, and the conurbations and industrial horizons of Merseyside and North Cheshire. The range of sites recorded reflects these contrasts in North West England, and while the preponderance of field system elements indicates the rural nature of much of the route, the many linear obstacles, including rivers, Roman and later roads, canals, and railways, demonstrate the importance of transport arteries crossing the area over many centuries. The NWEP project has contributed to our knowledge and understanding of the contrasting development of these landscapes.

LUAU routinely applies professional standards in accordance with the stated policy of English Heritage and the Code of Conduct of the Institute of Field Archaeologists. The aims of the NWEP project were to advise the developer on the best means of protecting archaeological features, to record all threatened sites and areas of archaeological interest, and to publish the results of the project. The primary objective was to seek to preserve archaeological remains *in situ*, and so excavation was considered an action of the last resort, when all protective strategies had been exhausted. Every effort was made to identify and record sites of archaeological importance prior to pipeline construction to avoid the necessity for detailed recording under difficult construction conditions, and to avoid costly delays to the construction timetable. A change in procedures was generated by the major policy revision expressed in the English Heritage publication, *The management of archaeological projects*. The fieldwork was conducted according to the provisions of the first edition of this manual (English Heritage 1989), while the revised methodology of reporting and archiving (English Heritage 1991) was followed in the post-excavation phase.

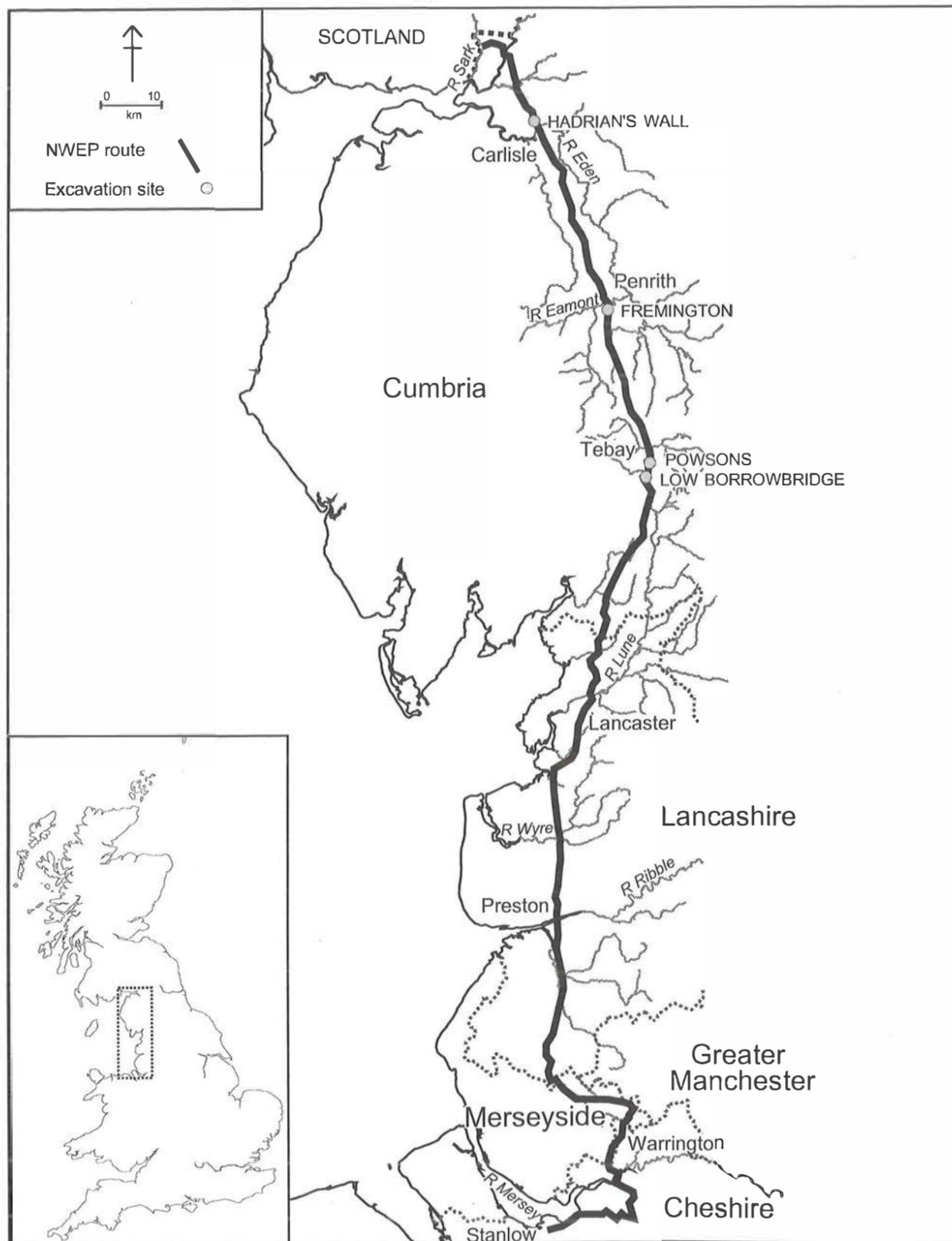


Fig 0:1 North West England and the pipeline route