



**Effluent Pipe Replacement Scheme,
Ground Investigation Beach Works, Newport**

Marine Licence No: RML2205

Archaeological Written Scheme of Investigation

A report for Kaymac Marine & Civil Engineering Ltd

May 2022

by

**The Glamorgan-Gwent Archaeological Trust Ltd
(GGAT Archaeological Services)**

**Project No. P2170
Report No. 2022/027
NGR ST 34371 82340**



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Document Control

Version	Author	Illustrations	Peer Review	Date approved
001	PWH	n/a	MT	03/05/2022

Summary

GGAT Archaeological Services has been commissioned by Kaymac Marine & Civil Engineering Ltd to prepare an archaeological Written Scheme of Investigation (WSI) relating to ground investigation works associated with the replacement of an effluent outflow pipe on the Severn Estuary near Goldcliff, Newport. Marine Licence No: RML2205 refers.

As the planned works are located in an area of archaeological potential, NRW's archaeological advisors have recommended that an archaeologist should be present during all intrusive groundworks. This WSI specifies the scope of works and standards for the archaeological watching brief applying to the investigative works.

The archaeological monitoring will be undertaken in line with the requirements of the Chartered Institute for Archaeologists' Standard and guidance for an archaeological watching brief (2014, revised 2020).

Authorship and acknowledgements

The project was managed by Martin Tuck MCIfA (Head of Archaeological Services). The report was prepared by Paul W Huckfield (Archaeological Services Officer). Illustrations were supplied by the client.

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Abbreviations

APM:	Archaeological Planning Management (GGAT)
GGAT:	Glamorgan-Gwent Archaeological Trust Ltd
HER:	Historic Environment Record (curated by the Glamorgan-Gwent Archaeological Trust)
ICON	Institute for Conservation
LPA:	Local Planning Authority
NGR:	National Grid Reference
NMR	National Monuments Record (curated by the RCAHMW)
NPRN:	National Primary Record Number (in NMR)
NRW:	Natural Resources Wales
PRN:	Primary Record Number (in HER)
RCAHMW:	Royal Commission on the Ancient and Historical Monuments of Wales

1 Introduction

1.1 Proposal and background

1.1.1 Kaymac Marine & Civil Engineering Ltd submitted an application to Natural Resources Wales (NRW) for a Marine Licence under Part 4 of the Marine and Coastal Access Act 2009, to undertake ground investigation work on an existing outfall pipe near Salt Marsh Lane, Goldcliff, Nash, Newport, prior to the replacement of the effluent outflow pipe.

1.1.2 In their capacity as advisors to NRW, and under a Memorandum of Understanding, the Heritage Management division of GGAT were asked to comment on the application. The response made the following comments and recommendations:

The application the area is located to the immediate south of the Gwent Levels Historic Landscape, included in the Register of Landscapes of Outstanding Historic Interest (HLW (Gt) 2), in particular the Historic Landscape Character Area of Nash/Goldcliff (HLCA001). The key historic landscape characteristics of the area are comprised of it being a "Diverse landscape: abundant intertidal and buried archaeological remains, drainage features (reens, banks, grips, surface drainage, bridges) small irregularly shaped fields, sinuous lanes with roadside waste, dispersed settlement, and large commons, monastic associations." It is also located adjacent to the Newport Archaeologically Sensitive Area (ASA).

Whilst the HER shows that there are no recorded sites located within the proposed area of works, there are numerous Prehistoric and Roman remains and sites located within the immediate proximity and consequently, there is a high potential for well preserved, buried, waterlogged, archaeological and palaeoenvironmental deposits to be encountered during any ground disturbing works.

Therefore, it is advised that an archaeologist should be present during the undertaking of any ground investigation works/trial pits and/or other associated ground disturbing works. They would be able to observe and record any archaeological and/or palaeoenvironmental remains that may be encountered, which will help to inform whether any further archaeological mitigation will be required or not for the next phase of the works regarding the replacement pipeline.

The appointed archaeologist will then need to produce a Written Scheme of Investigation, which details the methodology to which the archaeological work will adhere to.

1.1.3 A further condition stating that, 'The Licence Holder must ensure that any artefacts found during the Licensed Activities are reported through the Marine Antiquities Scheme,' was implemented by the marine licensing team following consultation with RCAHMW.

1.1.4 The Glamorgan-Gwent Archaeological Trust's commercial archaeology department (GGAT Archaeological Services) has been commissioned to prepare the WSI, which sets out the framework for the archaeological works to be undertaken.

1.2 Site description

- 1.2.1 The existing effluent outflow pipe is located on the foreshore of the Severn Estuary, at the southern edge of the RSPB Newport Wetland Reserve, approximately halfway between East Usk Lighthouse and the western end of Boat Road (NGR ST 34371 82340).

1.3 Description of the works

- 1.3.1 The works will be undertaken during spring low tides across two days and will involve access to the site by landing craft, which will be carrying a 15t excavator and a small tracked drilling rig. The landing craft will be grounded as far up the beach and the plant unloaded. The ground investigation works comprise the machine excavation of four boreholes and two trial pits along the length of the existing outfall in the intertidal zone and within an area with a footprint of approximately 500m by 50m (0.025 km²) (as identified in Figure 1). The landing craft will then be re-floated as the tide comes back in and all plant demobilised from site.

1.4 Geology

- 1.4.1 Bedrock and superficial deposits. St Mary's Well Bay Member - Limestone And Mudstone, Interbedded. Sedimentary Bedrock formed approximately 199 to 210 million years ago in the Jurassic and Triassic Periods. Local environment previously dominated by shallow lime-mud seas.
- 1.4.2 Setting: shallow lime-mud seas. These sedimentary rocks are shallow-marine in origin. They are detrital and biogenic, generally comprising fine-grained sediments, with carbonate material (coral, shell fragments) forming interbedded sequences (BGS, 2022).

1.5 Archaeological context

- 1.5.1 Although there are no archaeological features recorded within the planned works area boundary, there have been several finds of archaeological artefacts in the general area; these range from individual artefacts, such as a mattock, made from a section of reindeer antler (PRN 04888g) to faunal remains, (Auroch skeleton PRN 07590g), through to structural remains, such as a 30m long plank trackway (PRN 05734g). These features all date from the Prehistoric era. However, the general area is also rich in remains spanning the Roman period to the Second World War.

2 Specification

2.1 Purpose

- 2.1.1 The purpose of this WSI is to set out a quantifiable schedule of works against which performance, fitness for purpose and achievement of quality can be measured.
- 2.1.2 This WSI has been prepared to ensure that the work is undertaken to the standard required by the Chartered Institute for Archaeologists' *Standard and guidance for an archaeological watching brief* (2014 updated 2020).

2.2 Objectives

- 2.2.1 The objectives of this fieldwork are as follow:
- An investigation of the potential archaeological resource through monitoring of ground investigation works;
 - The presentation of these observations to be set out in a written report;
 - The preparation of an archive of data recovered and records made as a result of the project, and the deposition of this archive in a suitable receiving museum (ie National Museum of Wales) or similar institution.

2.3 Scope

- 2.3.1 The watching brief will be carried out during the investigative works adjacent to the original outfall on the foreshore (Figure. 1) and comprise the observation of any ground disturbance activities related to the scheme which at present comprises;
- Machine test pitting (pits 2m long x 0.6m wide x 2m deep)
 - Borehole survey (100mm diameter boreholes to a depth of approx. 5m)
 - Any other penetrative activity taking place in original ground not specified above.

2.4 Monitoring

- 2.4.1 The appropriate organisations will be given reasonable advance notice by the client of the commencement of works.
- 2.4.2 If necessary, site access will be afforded to NRW's archaeological advisors, in order to observe any significant archaeological features that are identified within the excavations.

2.5 Timing

- 2.5.1 Work is predicted to start on the 28/29th May subject to weather and tidal conditions.

3 Resourcing

3.1.1 GGAT Archaeological Services will provide the following input to carry out the specified archaeological works.

3.2 Staff

3.2.1 The project staff involved are experienced archaeologists drawn from the team regularly used. These will include:

- Martin Tuck MCIfA, Head of Archaeological Services), responsible for the management of the project and maintaining quality;
- Andrew Pearson MCIfA, Projects Manager, responsible for the management of the project and maintaining quality;
- Project Officers(s), responsible for carrying out fieldwork.
- Project Archaeologist(s), responsible for carrying out fieldwork.

3.2.2 Additional input will be provided by:

- Finds Specialist, responsible for finds recovery policy and arrangement of specialist services;
- Project Archaeologists (finds), responsible for cleaning, cataloguing and analysing finds;
- Illustrator, responsible for preparing publication-standard plans and drawings.

3.3 Specialists

3.3.1 Specialist expertise, if required, will be obtained from suitably qualified internal and external individuals. These specialists will be drawn from the following:

- Waterlogged wood: Prof Nigel Nayling / Dr Rod Bale (DendroArch/UWLAS (UWTSD).
- Ceramic building material: Martin Locock (freelance)/Dr Edith Evans (GGAT);
- Clay pipes: Charlotte James-Martin (Freelance);
- Coins: National Museum Wales (NMW);
- Conservation: Phil Parkes, Cardiff Conservation Services (Cardiff University);
- Flints: Elizabeth Walker (NMW);
- Glass: Joyce Compton (freelance);
- Metalwork: Dr Mark Redknap (NMW) / Prof Bill Manning (freelance);
- Medieval stone: Dr Mark Redknap (NMW);
- Medieval pottery: Joyce Compton (freelance);
- Metalwork and industrial residues: Dr Tim Young (Cardiff University and GeoArch);
- Mortar analysis: Rob Dunning (GGAT);
- Palaeoenvironmental remains: University of Wales Lampeter, Archaeological Services (UWLAS) / Wendy Carruthers (freelance) / QUEST Reading University;
- Post-medieval pottery: Joyce Compton (freelance);

- Prehistoric pottery: Jody Deacon (NMW);
- Roman pottery: Joyce Compton (freelance)/ Peter Webster (freelance);
- Roman brick and tile: Dr Edith Evans (GGAT);

3.3.2 Further specialist expertise in other disciplines will be obtained as required from suitably qualified individuals/institutions.

4 Implementation

4.1 Standards

- 4.1.1 The specified archaeological works will be undertaken to the highest possible standards in line with the requirements of the *Chartered Institute for Archaeologists' Standard and guidance for an archaeological watching brief* (2014, revised 2020).

4.2 Recording

- 4.2.1 During the works, all archaeological deposits will be recorded with a single continuous context numbering system. GGAT will, upon request, submit a copy of its recording forms and manual to the client.
- 4.2.2 Where appropriate, archaeological features will be drawn at a suitable scale in plan (usually 1/20 scale) and in section (usually 1/10 scale). All significant contexts will be digitally photographed, with a resolution of no less than 10 megapixels. Survey information will be related to the Ordnance Survey National Grid and levels related to the Ordnance Survey Datum.

4.3 Finds recovery and recording

- 4.3.1 All classes of finds will be cleaned and catalogued. They will be retained until arrangements for final deposition have been agreed, in line with the requirements of the Chartered Institute for Archaeologists' *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2014, updated 2020). If substantial quantities of undiagnostic, residual or modern material are recovered, an on-site recording and discard policy for these classes of find will be agreed.

4.4 Human remains

- 4.4.1 Should human remains be encountered, the Coroner will be immediately informed. The nature and extent of those remains will be established and recorded, but the remains will be left in situ, with suitable measures in place to ensure their protection during backfilling. Special circumstances may dictate the need to remove human remains if they are thought to be vulnerable to further damage or obstructive to the broader aims of the development works. In such cases, and in agreement with the archaeological advisor to the LPA, the human remains will be archaeologically recorded and removed under conditions that comply with all current legislation. This will include reporting to the relevant authorities, the obtaining of proper licences, and the provision for eventual reburial following appropriate analysis.
- 4.4.2 All human remains will be excavated by hand in accordance with the Chartered Institute for Archaeologists' *Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains: Technical Paper Number 13* (1993).
- 4.4.3 Excavation of human remains will be subject to further negotiation as a variation to the contract.

4.5 Environmental sampling

- 4.5.1 The management of any environmental recording and sampling will follow the principles and tenets laid down in Historic England's (formerly English Heritage) *Environmental Archaeology: A guide to the theory and practice of Methods, from*

sampling and recovery to post-excavation (2011). All deposits with a high potential for the preservation of palaeoenvironmental material will be sampled, by column, bulk and other method as appropriate, for possible subsequent analysis, in accordance with a sampling strategy overseen by a specialist with appropriate expertise. Sampling and recording will be the responsibility of an identified member of the field team with relevant experience.

4.6 Reporting

- 4.6.1 Following a review of the potential of the recovered evidence, a programme of analysis and research will be undertaken, resulting in the preparation of a report on the findings. This will present a synthesis of the fieldwork data, together with contextualising evidence drawn from archaeological and historical sources. The report will include plans, drawings and photographs as appropriate, as well as supporting data as appendices if required.
- 4.6.2 A PDF version of the report will be supplied to the client.
- 4.6.3 Where appropriate, short archaeological digest reports will be submitted for publication in relevant regional, national and thematic learned journals. As a minimum, a report will be submitted to the annual publication of the regional CBA group or equivalent journal.
- 4.6.4 Non-technical reports may also be produced to inform the general public of the archaeological investigations, which could include web resources, posters, leaflets or other media forms.
- 4.6.5 A digital copy of the report and full archive will be deposited with the National Monuments Record (RCAHMW, Aberystwyth), and a digital copy of the report and archive index will be deposited with the regional Historic Environment Record, in accordance with the *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Welsh Archaeological Trusts, 2018).

4.7 Archive and finds deposition

- 4.7.1 An archive of archaeological records relating to the fieldwork will be prepared to the specifications in *The National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales* (National Panel for Archaeological Archives in Wales 2017).
- 4.7.2 The site archive will be deposited with an appropriate institution, or retained by the landowner, as required, in accordance with the ICON and the National Panel for Archaeological Archives in Wales guidelines (*The National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales* (2017)), and subject to the agreement of the legal landowner. The National Museum of Wales (NMW Cardiff) or Newport Museum will be approached.
- 4.7.3 Any finds, including artefacts and ecofacts, excepting those which may be subject to the laws of *Treasure Act* (1996) and/or *Treasure Order* (DCMS 1996; 2002), will be deposited with the same institution, subject to the agreement of the landowner.
- 4.7.4 An agreement with an appropriate institution to accept this material will be made on completion of fieldwork and assessment of the nature of the finds recovered.

5 General

5.1 Insurance

- 5.1.1 GGAT holds full insurance cover for this type of work including Professional Indemnity and Public Liability cover. Full details of these and other relevant policies can be supplied to the client on request.

5.2 Health and Safety

- 5.2.1 GGAT will provide to the client if requested a copy of its Health and Safety statement in accordance with *The Health and Safety at Work Act 1974*. The main contractor should prepare any documentation required by the *Construction Design and Management Regulations 2015*.
- 5.2.2 Prior to commencement of work, GGAT will carry out a formal Health and Safety Risk Assessment in accordance with *The Management of Health and Safety Regulations 1999*. A copy of the risk assessment should be kept on any site office and be available for inspection on request.
- 5.2.3 In addition to statutory requirements, GGAT follow best practice for Health and Safety in archaeology as defined in the FAME (Federation of Archaeological Managers and Employers) *Manual of Health and Safety in Field Archaeology* (2010 and as updated).

5.3 General limitations

- 5.3.1 The work outlined in this specification will be carried out to the highest professional standards, and the conclusions drawn will be based on a considered review of the evidence available. However, the archaeological resource is unpredictable, and the encountering of unexpected archaeological deposits on the site cannot be ruled out. Where examination of such deposits is beyond the scope of the present specification, their investigation and analysis must be agreed by separate negotiation.
- 5.3.2 Should there need to be a variation to the provisions of the specification, this will be agreed in advance with the client and the relevant Authority (and/or their respective agents).

5.4 Quality control and standards

- 5.4.1 GGAT will carry out all works in accordance with the following Chartered Institute for Archaeologists' documents for conduct, regulations, and standards and guidance:
- Code of Conduct;
 - Regulations for professional conduct;
 - Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment.

5.5 Arbitration

- 5.5.1 Any dispute or difference arising out of a contract in relation to this work will be referred for a decision in accordance with the Rules of the Chartered Institute of Arbitrators' *Arbitration Scheme for the Chartered Institute for Archaeologists* applying at the date of the agreement.

6 References

Legislation and technical guidelines

Cadw, 2011, *Conservation Principles for the sustainable management of the historic environment in Wales*. Welsh Government.

Cadw, 2020, *Managing the Marine Historic Environment of Wales*. Welsh Government.

Chartered Institute for Archaeologists (McKinley, J, and Roberts, C), 1993, *Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains*. Technical Paper Number 13.

Chartered Institute for Archaeologists (Brickley, M, and McKinley, J), 2004, *Guidelines to the Standards for Recording Human Remains*.

Chartered Institute for Archaeologists (Mitchell, P, and Brickley, M), 2017, *Updated guidelines to the standards for recording human remains*.

Chartered Institute for Archaeologists, 2014, revised October 2019, *Code of Conduct*.

Chartered Institute for Archaeologists, 2014, updated October 2020, *Standard and guidance for an archaeological watching brief*.

Chartered Institute for Archaeologists, 2014, updated October 2020, *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*.

Chartered Institute for Archaeologists, 2014, updated October 2020, *Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment*.

Chartered Institute for Archaeologists, 2014, updated October 2020, *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*.

Chartered Institute for Archaeologists, 2014, updated October 2020, *Standard and guidance for nautical archaeological recording and reconstruction*.

Chartered Institute for Archaeologists, 2019, *Regulations for professional conduct*.

Department for Culture, Media and Sport, 1996, *The Treasure Act 1996 Code of Practice* (2nd Revision).

Department for Culture, Media and Sport, 2002, *Treasure (Designation) Order 2002*.

FAME (Federation of Archaeological Managers and Employers), 2010, *Manual of Health and Safety in Field Archaeology*.

Glamorgan-Gwent Archaeological Trust, 2002, *Manual of Excavation Recording Techniques*.

Historic England, 2011, *Environmental Archaeology: A guide to the theory and practice of Methods, from sampling and recovery to post-excavation*.

National Panel for Archaeological Archives in Wales, 2017, *The National Standard and Guidance to Best Practice for Collecting and Depositing Archaeological Archives in Wales*.

Welsh Archaeological Trusts, 2018, *Guidance for the Submission of Data to the Welsh Historic Environment Records*.

Online resources

British Geological Survey (BGS) mapping. Accessed 11 April 2022. Available at:
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

7 Glossary

Archive

An ordered collection of all documents and artefacts from an archaeological project, which at the conclusion of the work is deposited at a public repository, such as a local or national museum.

Assessment

A desk-based assessment is a detailed consideration of the known or potential archaeological resource within a specified area or site (land-based, intertidal or underwater). It consists of a collation of existing written and graphic information in order to identify the likely character, extent, quality and worth of the known or potential archaeological resource in a local, regional or national context as appropriate.

Brief

An outline framework of the archaeological situation that is to be addressed, together with an indication of the scope of the works that will be required.

Cadw

Cadw is the Welsh Government's historic environment service. Cadw are responsible for the planning issues which affect statutorily protected monuments and buildings. They also grant aid repairs to historic buildings and monuments and manage monuments which are in direct State care.

Field evaluation

A limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site; and, if present, defines their character and extent, and relative quality. It enables an assessment of their worth in a local, regional, national or international context as appropriate. The programme of work will result in the preparation of a report and ordered archive

Historic Environment Record (HER)

A documentary record of known sites in a given area. In South-east Wales the HER is curated by the Curatorial Division of the Glamorgan-Gwent Archaeological Trust.

Natural

Archaeological term for undisturbed natural soils or geology on a site.

NGR

National Grid Reference.

RCAHMW

Royal Commission on Ancient and Historic Monuments of Wales, based in Aberystwyth.

Risk Assessment

A document prepared to meet the requirements of *The Management of Health and Safety at Work Regulations 1992* assessing all risks to the health and safety of employees and others arising from a work activity.

Specification

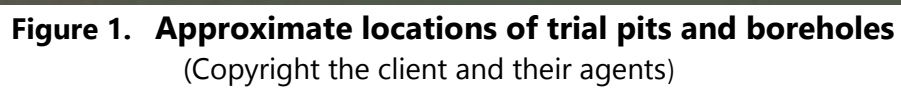
A written schedule of works required for a particular project (by a curator, planning archaeologist or client), set out in sufficient detail to be quantifiable, implemented and monitored. Normally prepared by or agreed with the relevant curator.

Watching brief

An archaeological watching brief is defined as a programme of observation, investigation and recording conducted during any operation carried out for non-archaeological reasons within a specified area or site, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme of work will result in the preparation of a report and ordered archive.

Welsh Archaeological Trusts

There are four Welsh Archaeological Trusts, Clwyd-Powys, Dyfed, Gwynedd and Glamorgan-Gwent. The Trusts were established between 1974 and 1975 in order to carry out rescue archaeological work in Wales. The Trusts are divided into Contracting and Curatorial Divisions. They are all charities but are also limited companies.





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