

**Blackstone Wastewater Treatment Works,
Blackstone Lane, Blackstone, Horsham, West Sussex**

**Written Scheme of Investigation for
Archaeological Watching Brief**

NGR 524285 116600

Prepared on Behalf of Southern Water



ASE Project no. 230461

Site Code: BWW23

February 2024

Archaeology South-East

Units 1 & 2

2 Chapel Place

Portslade

East Sussex

BN41 1DR

Tel: 01273 426830

Email: ase@ucl.ac.uk

Website: www.ucl.ac.uk/archaeologyse



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Prepared by:	Kathryn Grant Reis	Senior Archaeologist (Historic Environment)	
Checked by:	Richard James	Senior Archaeologist	
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1.0 INTRODUCTION

- 1.1 Archaeology South-East (ASE) has been commissioned on behalf of Southern Water to undertake an archaeological watching brief of land at Blackstone Wastewater Treatment Works (WTW), Blackstone Lane, Blackstone, Horsham, West Sussex, BN5 9TF, hereafter referred to as 'the site' (centred on NGR 436496 097254; Fig. 1).
- 1.2 The site lies approximately 500m north-west of the hamlet of Blackstone within the Horsham district of West Sussex. The Blackstone WTW is situated to the west of the Blackstone Lane and south of a stream/brook. A sewage bed is first shown on the 1956 Ordnance Survey map, with a 'sewage works' shown from 1977. However, the majority of the WTW appears to have remained undeveloped with just a filter bed located in the southern half. The site sits at approximately 15m aOD (above Ordnance Datum). Figure 2 shows the WTW as existing.
- 1.3 According to the latest data available from the British Geological Survey (BGS 2023) the underlying bedrock geology at the site Weald Clay Formation. Whilst no superficial deposits are recorded on the site itself nearby there are alluvial deposits on the valley floor to the north and River Terrace Deposits 2 (Quaternary) to the south.
- 1.4 Works are proposed to improve phosphate removal with a maximum depth of 4m. The proposed works involve development within the existing Southern Water Sewage Works compound boundary and include the construction of (Fig. 3):
- a proposed chemical storage and dosing kiosk
 - a proposed emergency shower
 - a proposed emergency chemical delivery area
 - a proposed fluctuation tank
 - a proposed sampling kiosk
 - a proposed HDSE reel and a
 - a proposed MCC kiosk (requires planning permission)
- 1.5 The majority of the works fall within the parameters of Permitted Development (PD) and therefore fall outside of the usual planning process. These rights will be in accordance with the Code of Practice on Conservation, Access and Recreation issued under the Water Industry Act 1991. This WSI has been prepared in relation to the archaeological works proposed as part of the permitted development works. The construction of the MCC kiosk is subject to planning and an archaeological Desk-Based Assessment (DBA) to include an assessment of the setting of nearby designated heritage assets is currently being prepared to support the planning application.
- 1.6 Early archaeological advice was provided to Southern Water by ASE in relation to these works and it was suggested that given the generally unknown potential for archaeological and geoarchaeological remains to be present in the areas of the site which have not been developed, in addition to the absence of previous archaeological investigation at the site, watching brief monitoring should be carried out during new excavations. The watching brief will therefore be maintained until the deposits, level of disturbance and archaeological presence/absence has been characterised in the area of the

proposed works. This will also allow for the geoarchaeological potential of the alluvium to be assessed. The superficial alluvium and RTD may extend into the compound and if so, they are presumed to have some geoarchaeological potential.

- 1.7 This document represents a Written Scheme of Investigation (WSI) for the archaeological watching brief of the site, which outlines the methodologies to be used in fieldwork and in post-excavation. It has been prepared in accordance with relevant Standards and Guidance of the Chartered Institute for Archaeologists (CIfA 2014; 2020; 2023). All work will be reported upon in line with guidelines set out in Management of Research Projects in the Historic Environment (MoRPHE; Historic England 2015). It will be submitted to all parties for approval prior to the commencement of work at the site.
- 1.8 All work will be carried out in accordance with the Sussex Archaeological Standards (WSCC, ESCC, CDC 2019) which outlines the methodology to be used in the field, and in reporting and archiving of the results. The project will be managed by Leonie Pett (Project Manager) and by Jim Stevenson (Post-Excavation Manager).

2.0 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 2.1 The historical and archaeological background summarised below is amalgamated from other nearby ASE projects and local background information. General archaeological background text is also derived from period templates maintained by ASE. There is generally a paucity of known archaeological remains within the study area but this, at least in part, may reflect the comparative absence of investigation rather than an absence of remains.
- 2.2 Prehistoric material within the Weald tends to be sparse. The region was covered in dense forest throughout this period, and much of the known settlement pattern concentrates around the rim of the Weald, exploiting the better soils of the Chalk and Greensand. The small amount of prehistoric material that is known from the area tends to be of Mesolithic date and reflects activities associated with resource exploitation, often on a seasonal basis, and mainly comprises evidence for hunter gathering activity. Some small-scale agricultural exploitation of the more tractable soils is suggested by pollen evidence from the Neolithic onwards, and the presence of Bronze Age barrows (burial mounds) within the High Weald points to some level of settlement at this period. The Iron Age saw the exploitation of iron ore deposits, and the presence of fortified hilltop enclosures suggesting some level of control of this industry.
- 2.3 The remains of a curvilinear gully and an elongated pit or ditch terminus were recorded to the north-west of the WTW during the Rampion Offshore Wind Farm archaeological investigations conducted by ASE (Site E) (Sheehan and Reynolds 2022, 29). Site E was located south of Cutler's Brook, adjacent to Woodhouse Wood and at an elevation of between 14.75 and 16.30m aOD. The linear features (G74 and G75) produced lithic material and pottery of Late Bronze Age date.
- 2.4 Evidence for Roman activity in the Weald is sparse, and is confined mainly to roads and ironworking sites. Few settlement sites have been found in the

Weald (Rudling 1999), although some sites such as villas at Chiddingfold in Surrey and Wiggonholt in West Sussex are known from the less bleak periphery (Gardiner 1990).

- 2.5 During the Anglo-Saxon period, the Weald was largely covered by the great forest of *Andredeswald*. The heavily forested nature of the region limited settlement at this period, and the iron-working industry seems to have shrunk in scale in comparison with the Roman period. Hurstpierpoint, the parent manor of Sayers Common, originated as a settlement established along the fertile greensand soils beneath the chalk scarp. Many of the north-south aligned roads, tracks and footpaths in the region originated at this time as droeways. Little is currently known of the nature of Saxon occupation in the surrounding rural area.
- 2.6 In 1262, Blackstone was one of two tithings (a group of households in an area of ten hides), the other being the now non-existent Bilborough at the west of the parish from Blackstone. In 1558, a nucleated settlement was recorded at Blackstone Street and by 1595, this was recorded as Blackstone 'hamlet'.
- 2.7 The Rampion Offshore Wind Farm archaeological investigations (Sheehan and Reynolds 2022, 31) identified a number of ditches, pits, and post-holes, indicative of an enclosed medieval settlement just to the north of the stream known as Cutler's Brook and north-west of the WTW site. Recovered artefactual material from the identified features suggested that these enclosures were directly associated with an area of settlement, as opposed to representing the remains of a backfield field system, since the recovered pottery assemblage is almost totally dominated by cooking pots and also includes finds of a honing stone, a rotary quern fragment, and nail shanks. The earliest phase appeared, on pottery evidence, to have begun in the 12th century, with an expansion of the settlement through the 13th and up to the mid-14th centuries.
- 2.8 The site lies approximately 500m north-west from the main settlement, which appears to have focussed around Blackstone Street, a road that runs east-west at right angles to the line of Blackstone Lane. In 1724, Blackstone Street was a part of a west to east road that ran along a sandstone outcrop from Henfield to Hurstpierpoint and was considered to be the main road through the parish from the 15th to the 17th centuries (in 1469 it was named the Henfield-Hurstpierpoint road). At this time, a number of buildings existed on either side of Blackstone Street, including the still extant Yeomans Hall, Stockmans, and Blackstone House. There is a small cluster of Grade II Listed buildings in the Blackstone hamlet (c.500m south-west from the site) – these lie within the Blackstone Conservation Area.
- 2.9 Scattered across the Blackstone landscape are a number of nucleated farmsteads, often comprising buildings of early post-medieval date, but possibly occupying much older sites. These farmsteads coalesce on an area of higher ground of Greensand and the Low Weald to the north. The geology of the area appears to have played a key role in where the settlement of Blackstone was established. Up until at least the First World War, crop production at Blackstone was chiefly of wheat, oats and beans. An area of ridge and furrow is recorded on the HER lying behind Blackstone Grange at TQ 2380 1627 (WS HER ref. MWS3887) to the north of the main settlement area.

3.0 RESEARCH AIMS AND OBJECTIVES

3.1 General Aims and Objectives

3.1.1 In general, the aim of the watching brief is to record, interpret and report on any archaeological and geoarchaeological remains exposed during the groundworks associated with this development (including artefacts or ecofacts of archaeological interest) to appropriate archaeological standards.

3.1.2 The watching brief will also assess the past impacts on the site and pay particular attention to the character, height/depth below ground level, condition, date and significance of the deposits.

3.2 Specific Aims and Objectives

3.2.1 Little is currently known about the site itself, but based on the known background and history of the surrounding area, the watching brief may provide an opportunity to answer some of the following questions:

- Is there any evidence for Late Bronze Age activity at the site (e.g. features, lithic material and/or pottery) similar to that found during archaeological investigations to the north-west and south and along the stream?
- Is there any evidence relating to the Wealden Iron Industry, for which the wider area is renowned, particularly owing to the nearby water source and areas of ancient woodland?
- In light of the predominantly agricultural character of the wider area during the medieval and post-medieval period, is there any evidence for farming at the site or is there any other activity taking place at the site prior to the development of the WTW?

3.3 Regional Research Aims

3.3.1 The watching brief has the potential to address the following research questions and research priorities drawn from the South-East Research Framework (SERF) (the research objectives will be revised appropriately in the event that significant remains are identified):

- Can we deepen our understanding of the technology, scale and organisation of the iron industry? This is a key industry within the region but present evidence is restricted to a handful of sites, far too fragmentary to make informed judgements or generalizations. The relationship between points of extraction in the Weald and smelting/processing sites needs greater clarification [SERF: 30]
- More understanding of the landscape of primarily dispersed rural settlement in terms of development and maintenance over space and time deposits [SERF 40]
- Systematic investigation of landscapes through on an off-site analysis of a range of biological remains from waterlogged deposits and the

proper retrieval of molluscs and charred plant remains including charcoal from dry deposits [SERF 40]

4.0 METHODOLOGY

- 4.1 Any intrusive ground works associated with the permitted development elements of the development within the Sewage Works compound area, as shown in Figure 3 will be monitored by an archaeologist.
- 4.2 A Risk Assessment and Method Statement (RAMS) will be produced prior to the commencement of the work. The development partner and their contractor will be responsible for locating all services.
- 4.3 Any machine used for removal of material above undisturbed natural geology will be fitted with a toothless bucket of appropriate width whenever practicable. Any machine and/or hand excavation undertaken by the ground work contractor must be undertaken with due regard for the potential to encounter archaeological remains.
- 4.4 Any exposed archaeological deposits will then be cleaned by hand and recorded in plan and section. During the watching brief archaeological features/deposits will be excavated enough to characterise them. If significant archaeological remains come to light during the course of the groundworks, additional investigation and recording may be required. The scope of such work would be agreed in consultation with Southern Water.
- 4.5 The provisions of the Treasure Act of 1996 (amended 2003) will be observed. Should finds of precious metals such as gold and silver and other finds as defined under the Act be made, they will be reported to the client, the Historic England and the appropriate coroner's office.
- 4.6 The strategy for environmental sampling during watching briefs will normally be the same as for comprehensive archaeological excavation (see Section 5.0 below).
- 4.7 At all reasonable times the groundworks contractor shall allow the monitoring Archaeologist(s) sufficient time, facilities and access to identify, clean, record and investigate archaeological features, deposits and structures on relevant parts of the site, subject to Health and Safety considerations.
- 4.8 In observing ground excavations on the site the monitoring Archaeologist shall inform the contractor as soon as reasonably possible where he / she believes that archaeological features, deposits or structures have been exposed during the course of ground excavations on the site, that will require identification, cleaning, investigation and recording.
- 4.9 The monitoring Archaeologist shall carry out necessary identification, cleaning, recording and investigation with due consideration to the developer's work programme and with regard to their desire to proceed with ground excavations and other building works without undue delay.
- 4.10 If human remains are found they will be left in situ, covered over and protected. The client and the Archaeological Officer will be informed immediately.

- 4.11 The development partner will arrange all fencing around work areas.

5.0 RECORDING AND ANALYSIS

- 5.1 The spoil from the excavations will also be inspected by the ASE archaeologist to recover any artefacts or ecofacts of archaeological interest. A metal detector will be used at regular intervals to scan spoil derived from the excavations and at regular intervals during the excavation of archaeological deposits and features.
- 5.2 All archaeological features will be recorded according to standard ASE practice. Where practicable, all features will be planned at 1:20 and section/wall elevation drawings will be at 1:10, unless this is impractical in which case an alternative will be agreed with the Archaeological Officer. Drawings will be on plastic draughting film. Features and deposits will be described on standard pro-forma recording sheets used by ASE. All remains will be levelled with respect to Ordnance Survey datum. A photographic record will be made in digital format, monochrome and colour transparency.
- 5.3 The strategy for sampling archaeological and environmental deposits and structures (which can include soils, timbers, animal bone and human burials) will be developed with reference to Historic England guidelines for environmental archaeology (Historic England 2011) and waterlogged wood and in consultation with the Historic England regional advisor or relevant specialists. Samples will be collected from suitable excavated contexts, including dated/datable buried soils, well-sealed slowly silting features, sealed hearths, sealed features containing evident carbonised remains, peats, waterlogged or cess deposits.
- 5.4 Bulk soil samples (of 40 litres where possible or 100% of the context if smaller) will be taken to target the recovery of plant remains (including wood charcoal and macrobotanicals), fish, bird, small mammal and amphibian bone, and small artefacts. Specialist samples may also be taken to target recovery of pollen (using monolith tins), fish and small bone, molluscs, foraminifera, parasites and insects (in small <20 litre samples) or large mammal bones and marine molluscs (in large samples of ~80-100 litres). When taken, large samples will be extracted wholesale from deposits to maximise the range of bone recovered. As a general rule waterlogged wood specimens will be photographed and recorded in detail in their original location prior to being lifted or sampled for more detailed assessment. Other scientific dating and geoarchaeological techniques will be considered and employed where appropriate. In all instances deposits with clear intrusive material shall be avoided.

6.0 TREATMENT OF ARTEFACTS AND ECOFACTS

- 6.1 All pottery, bone and worked flint recovered from the excavations will be washed and marked with an appropriate code to identify the site and context. Most ceramic and other building material and burnt flint will be identified, counted, weighed and discarded. Samples will be retained as appropriate. Finds will be bagged in polythene bags according to type and context.

- 6.2 The lithic and ceramic finds will be identified by specialists within Archaeology South-East, and preliminary identification of faunal remains may be undertaken if the nature of the deposits justifies such study. All finds in an unstable condition will be stabilised using passive conservation techniques where appropriate before being deposited with the receiving museum.
- 6.3 Bulk samples will be processed using tank flotation unless considered detrimental to the samples or recovery rate (such as for waterlogged samples). Waterlogged samples will be wet sieved through nested sieves and stored in wet, cool conditions or dried if considered an appropriate form of conservation for the remains. Flots and wet samples may be subsampled for assessment purposes.
- 6.4 If waterlogged wood specimens are removed from site they will be cleaned, recorded, photographed and a thin section sample will be taken for identification (unless considered detrimental to the artefact preservation or status). These specimens will be stored submerged in water in cool conditions and assessment will establish whether appropriate for conservation. Specialist samples as well as sub-samples of bulk soil samples (taken to recover pollen, parasites, fish and small bone, foraminifera and insects for example) will be sent to appropriate specialists for assessment and analysis.
- 6.5 Provision will be made for obtaining charcoal samples for radiocarbon dating from such archaeological features as structural features (e.g. post holes), hearths, kilns or features that contain good artefactual or ecofactual assemblages.

7.0 REPORTING

- 7.1 Within four weeks of the completion of the fieldwork a full report on the results of the watching brief will be submitted to Southern Water. It will include the local geology and archaeological evidence. It will describe the work undertaken and results of elements described above. It will include a description of archaeological features and tabulated details of finds from each context. A list of environmental samples and any samples taken for dating will also be included. The report will include a plan showing the trench locations. Further plans, sections and photographs of features located and excavated will be included as necessary.
- 7.3 A draft report will be submitted to Southern Water in the first instance, then to the Archaeological Officer. Once any necessary changes have been made, the approved final report will be submitted to the client and should be passed to the local planning authority with a further copy submitted to West Sussex County Council so that the results may be added to the Historic Environment Record. A short summary of the work will be prepared for the relevant local archaeological journal.
- 7.4 A further digital copy of the report (including plans, illustrations and photographs) will be supplied to West Sussex Historic Environment Record on CD-ROM in a .pdfa format.

8.0 PREPARATION AND DEPOSITION OF THE FINDS AND ARCHIVE

- 8.1 The site archive will be assembled in accordance with the guidelines set out in: 'Archaeological Archives. A guide to best practice' (Archaeological Archives Forum (AAF), 2011); 'A Standard and Guide to best practice for Archaeological Archiving in Europe' (Europae Archaeologiae Consilium (EAC), 2013); and 'Standards in the Museum Care of Archaeological Collections' (Society for Museum Archaeology (SMA), 2020).
- 8.2 Artefacts and ecofacts recovered during excavation form an important part of an archaeological site archive. The archive will be deposited in the local receiving museum.

9.0 HEALTH AND SAFETY

- 9.1 A risk assessment for the project will be prepared prior to the commencement of work. All relevant health and safety regulations will be adhered to.

10.0 INSURANCE

- 10.1 Archaeology South-East is insured against claims for: employer's liability to the value of £50,000,000 each and every loss, any one occurrence; primary public/products liability to the value of £50,000,000 any one occurrence and in the aggregate for products liability, with an extension for no-fault compensation up to £15,000,000 in the aggregate; professional indemnity to the value of £15,000,000 any one occurrence and in the aggregate.

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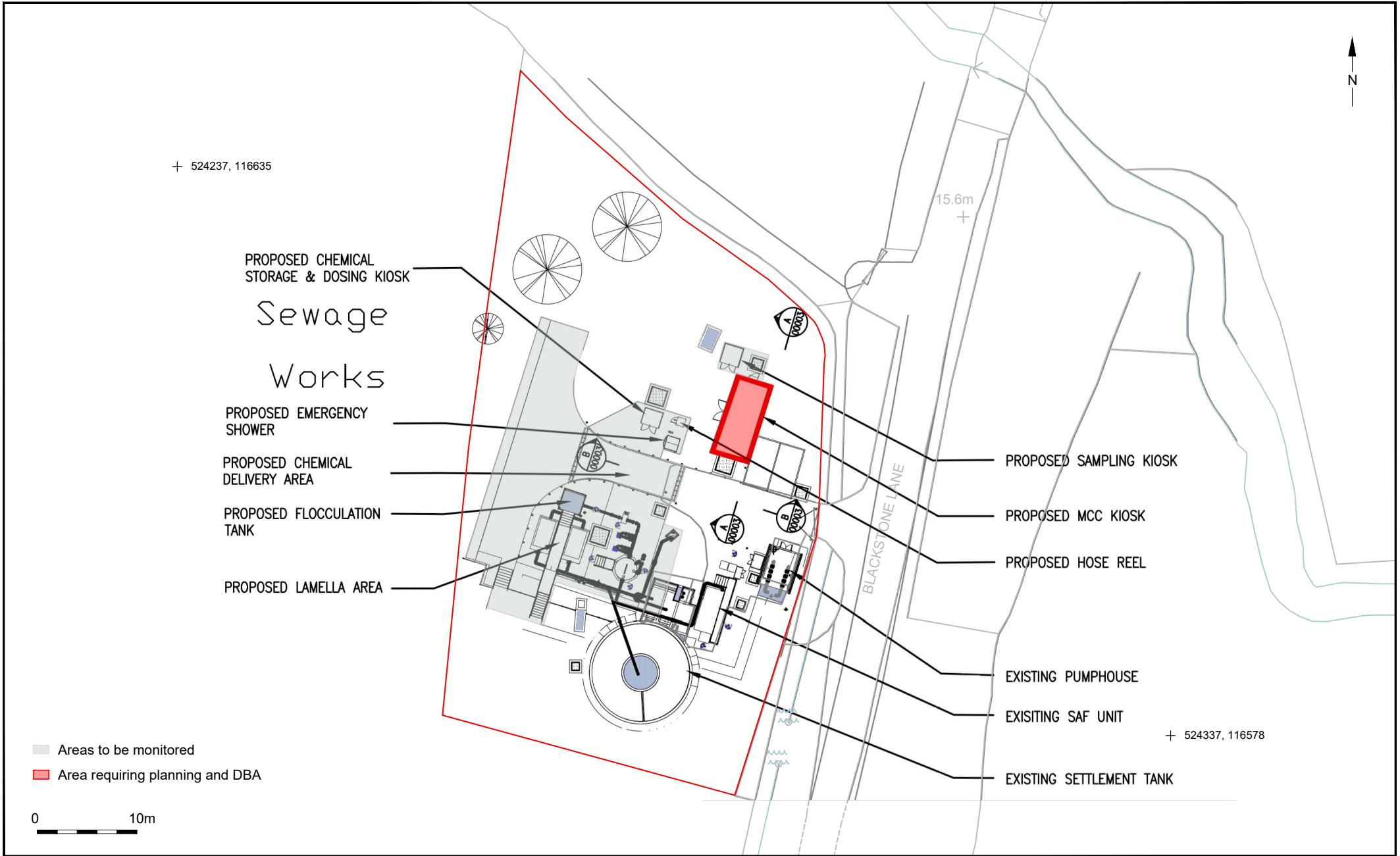
Archaeology South-East
8th February 2024



© Archaeology South-East		Blackstone Wastewater Treatment Works, Blackstone Lane, Blackstone, Horsham, West Sussex	Fig. 1
Project Ref: 230461	February 2023	Site Location	
Report Ref: WSI	Drawn by: LG		



© Archaeology South-East		Blackstone Wastewater Treatment Works, Blackstone Lane, Blackstone, Horsham, West Sussex	Fig.2
Project Ref: 230461	February 2024	Existing Site Layout	
Report Ref: WSI	Drawn by: LG		



© Archaeology South-East		Blackstone Wastewater Treatment Works, Blackstone Lane, Blackstone, Horsham, West Sussex	Fig.3
Project Ref: 230461	February 2024	Plan showing proposed works and watching brief monitoring areas	
Report Ref: WSI	Drawn by: LG		