

## Archaeological Services & Consultancy Ltd

### **ARCHAEOLOGICAL EVALUATION: CLIFTON SEWAGE TREATMENT WORKS, BEDFORDSHIRE**

*on behalf of Anglian Water Services Ltd*



**Nigel Wilson HND AIFA**

**June 2007**

**ASC: 902/CSW/2**

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## Site Data

<i>ASC site code:</i>	CSW	<i>Project no:</i>	902
<i>County:</i>	Bedfordshire		
<i>Village/Town:</i>	Clifton		
<i>Civil Parish:</i>	Clifton CP		
<i>NGR (to 8 figs):</i>	TL 1767 4026		
<i>Extent of site:</i>	1.8 hectares		
<i>Present land use:</i>	Sewage treatment works		
<i>Planning proposal:</i>	Upgrading of sewage treatment works		
<i>Local Planning Authority:</i>	Mid Bedfordshire District Council		
<i>Planning application ref/date:</i>	N/a		
<i>Client:</i>	Anglian Water Services Ltd Thorpe Wood House Thorpe Wood Peterborough PE3 6WT		
<i>Contact name:</i>	John Whitaker / Chitral Stambo		

## Internal Quality Check

<i>Primary Author:</i>	Nigel Wilson	<i>Date:</i>	7 <sup>th</sup> June 2007
<i>Revisions:</i>		<i>Date:</i>	
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*Cover:* General view of the haul road area

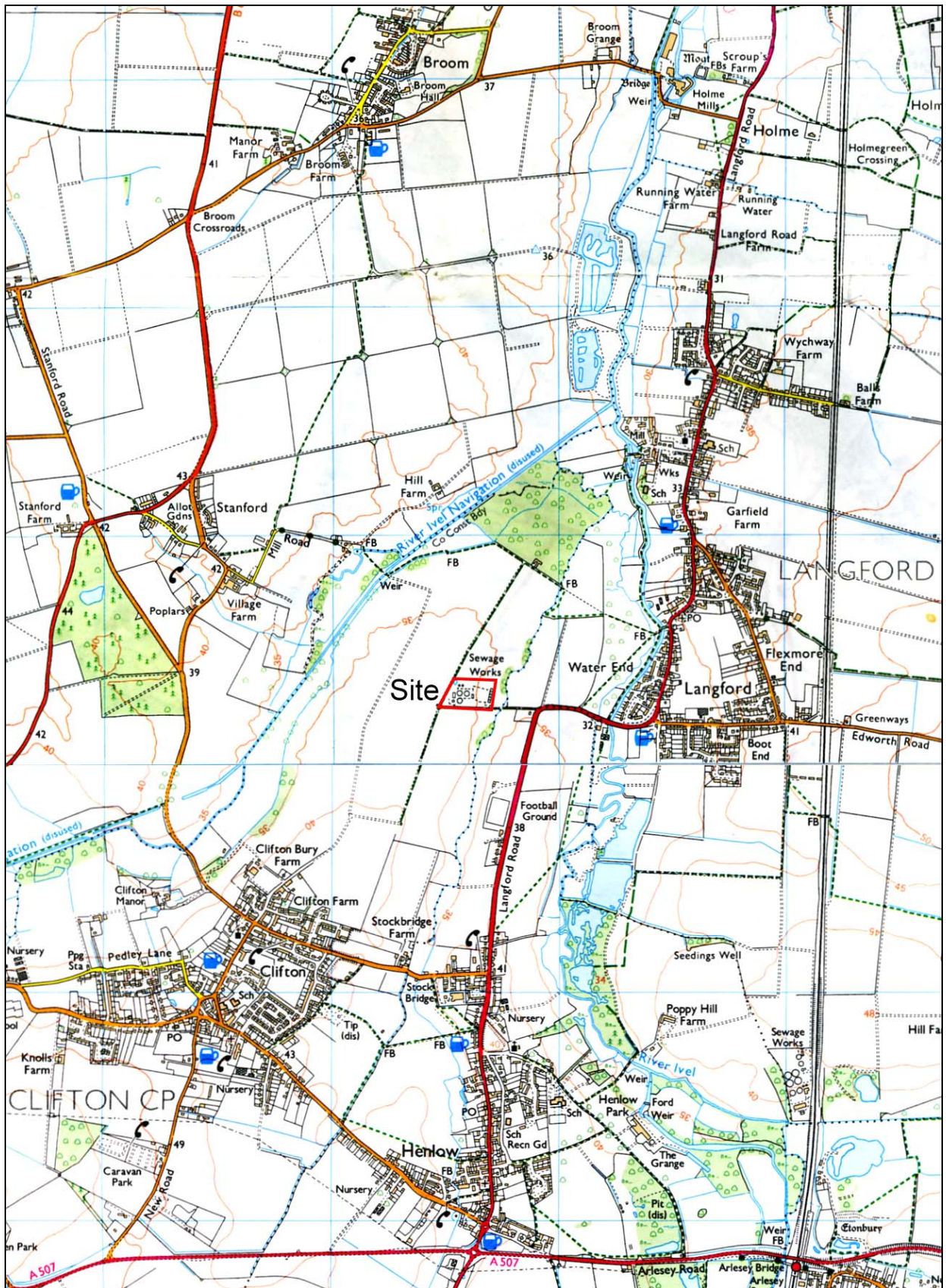


Figure 1: General location (scale 1:25,000)

## Summary

*During May and June 2007, an evaluation was undertaken at Clifton Sewage Works, Bedfordshire, in advance of upgrading of the works. Aerial photographs of the area surrounding the sewage works show a concentration of cropmarks. It was considered likely that prehistoric ditches associated with these cropmarks may have been uncovered within the development area. However no archaeological features were found within the evaluation trenches.*

## 1 Introduction

1.1 In May and June 2007 *Archaeological Services and Consultancy Ltd (ASC)* carried out an evaluation at Clifton Sewage Works, Clifton, Bedfordshire (NGR TL 1767 4026: Fig. 1). The project was commissioned by *Anglian Water Services Ltd (AWSL)*, and was carried out according to a brief (Bedfordshire County Council 2007) prepared by *Bedfordshire County Council Heritage and Environment Section*, and a project design prepared by ASC (Hawtin 2007).

### 1.2 *Planning Background*

This evaluation was required under the terms of AWSL's statutory obligations, in response to proposals for upgrading the sewage works.

### 1.3 *Location & Description*

The site is currently in use as a sewage treatment works. It lies to the west of Langford and northeast of Clifton in mid-Bedfordshire, at NGR TL 1767 4026 (Fig. 1). The River Ivel is c.500m east of the sewage treatment works and a tributary of the River Ivel runs close to its eastern periphery.

### 1.4 *Services, Buildings, Access, Etc*

Clifton Sewage Treatment Works currently consists of several structures, including tanks and filter beds (Fig. 2). Two telephone masts are present towards the northeast corner of the site and a power cable duct runs across the area of the proposed development (Fig. 2). Access is via Langford Road (A6001).

### 1.5 *Geology & Topography*

The site lies on relatively flat ground, at an elevation of c.35m AOD. The soils of the area comprise the *Sutton 1 Association*, which is described as *well drained fine and coarse loamy soils locally calcareous and in places shallow over limestone gravel* (Soil Survey 1983: 571u). The underlying geology consists of River terrace gravel (*ibid.*).

### 1.6 *Proposed Development*

The proposed upgrades to Clifton Sewage Treatment Works involve the construction of a primary settlement tank, aeration tank, distribution chamber and two final settlement tanks along the northern edge of the site, plus an inlet works and mixing chamber at the northwest corner of the site (Fig. 2). An additional area of land to the

immediate north of the site will be rented from the landowner during the construction period (outlined in blue on Fig. 2). Temporary haul roads will be constructed on this piece of land and some excavation and backfilling will be undertaken.

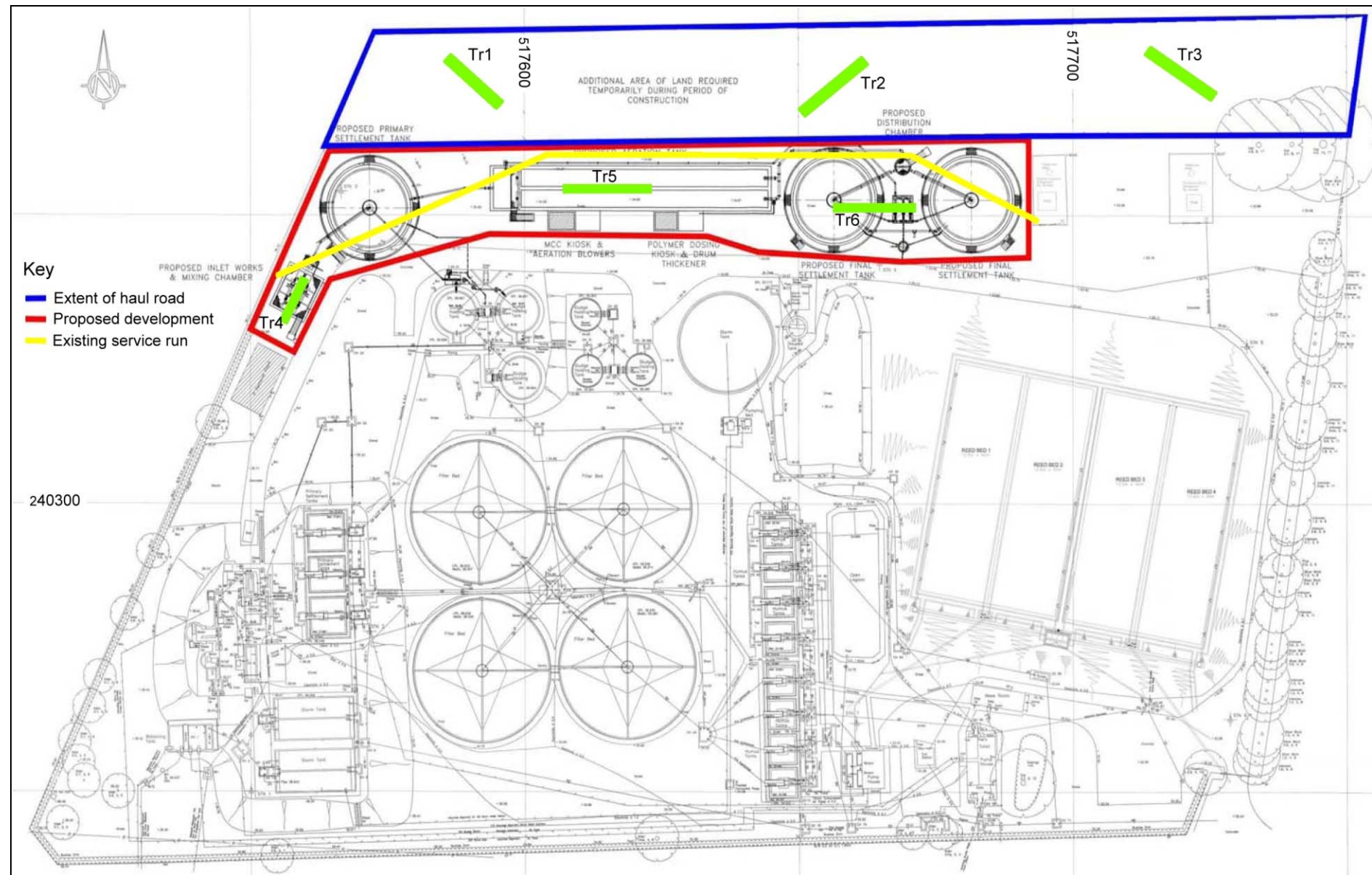


Figure 2: Site plan and trench locations (scale 1:1000)

## 2 Aims & Methods

### 2.1 Aims

As described in the brief (Section 2), the aims of the evaluation were:

- To determine the location, extent, nature and date of any archaeological features or deposits that may be present
- To determine the integrity and state of preservation of any archaeological features or deposits that may be present

### 2.2 Standards

The work conformed to the project design, to the relevant sections of the Institute of Archaeologists' *Code of Conduct* (IFA 2000) and *Standard & Guidance Notes* (IFA 2001), to the Association of Local Government Archaeological Officers East of England Region *Standards for Field Archaeology in the East of England* (ALGEO 2003), and to the relevant sections of ASC's own *Operations Manual*.

### 2.3 Methods

2.3.1 The work was carried out according to the brief (Section 3), which required:

- Excavation of a series of trial trenches within the proposed development area. These were located to define and characterise likely areas of archaeological sensitivity and to confirm the absence of features in areas that appear blank.
- Removal of the topsoil and overburden down to the natural subsoil or archaeological deposits, whichever was encountered first, by suitable excavating plant fitted with a toothless bucket, working under close archaeological supervision.
- Sampling and recording of any archaeological features present, in accordance with the project objectives (see above).
- Scanning of spoil for artefacts.

2.3.2 Six evaluation trenches were excavated and locations are shown in Figure 2. Each trench was *c.* 1.6m wide and *c.* 15m long. The trenches aimed to provide as wide a sample as possible of the site and also targeted the areas of the proposed inlet works, mixing chamber, settlement tanks, aeration tank, distribution chamber and haul road.

### 2.4 Constraints

Apart from Trench 4 which had to be moved and reduced in size to 9m to avoid a live power cable, no constraints were encountered during the evaluation and the remaining trenches were laid out as proposed in the project design.



### 3 Archaeological & Historical Background

Clifton Sewage Treatment Works lies within an archaeologically rich landscape, with archaeological remains ranging from the Neolithic to the medieval periods in close proximity. Very little archaeological investigation has been undertaken in the area, largely limited to surveys of the cropmarks visible on aerial photographs, which are recorded in the Bedfordshire Historic Environment Record (HER). The following is a summary of the known historical and archaeological background of the area.

#### 3.1 Cropmarks

Numerous cropmarks have been identified in the fields adjacent to the site. It is difficult to date these without further investigation, but it is likely that they represent buried remains ranging from the Bronze Age to the Roman period.

Extensive cropmarks in the field to the immediate north of the sewage works represent a rectilinear enclosure and additional linear features, including a possible double-ditched trackway (HER 3868; NGR TL 177 406).

To the immediate southwest of the site there are further linear cropmarks, representing two irregularly parallel ditches running NE-SW for over 500m (HER 15097; NGR TL 179 395). These align with, and may be a continuation of, the double-ditched trackway seen to the north, suggesting that the features could run through the centre of the sewage works.

A possible ring ditch (ploughed-out burial mound) is situated *c.*100m northwest of the sewage works and further extensive cropmarks are located *c.*600m to the northwest of the site (HER 1785; NGR TL 172 406). These include a large sub-rectangular double-ditched enclosure and additional smaller rectilinear enclosures.

The cropmarks in the fields to the east of the site, across the tributary of the River Ivel, consist of ring ditches, curvilinear enclosures, rectangular enclosures and linear features, representing settlement activity (HER 11761; NGR TL 179 403-4). The closest of these ring ditches are *c.*200m from the eastern boundary of the sewage works.

To the southwest of the sewage works, across the road, further cropmarks have been identified as *two or more separate curvilinear enclosures* (HER 15098; NGR TL 181 400).

#### 3.2 Roman (AD43-c.450)

Archaeological remains dating to the Roman period are common in this region. The site lies *c.*3.5km west of London Road (the A1), which largely follows the course of a Roman road. There are known Roman villas at Shefford and Astwick, Roman burials have been discovered in Biggleswade, Shefford and Southill, and Roman pottery has been found in Arlesey and Langford (Simco 1984).

The Viatores suggested in their *Roman Roads in the South-East Midlands* (1964) that Langford Road may follow the course of a Roman road (HER 5342), with a possible lynchet at the sharp bend near Clifton Sewage Treatment Works (HER 10484). However, this is conjectural and currently unproven.

### 3.3 Saxon (c.450-1066)

The *Domesday Book*, Survey (1086-7), also records the values of land before the Norman Conquest of 1066. Both Langford (*Langeford*) and Clifton are mentioned in the book, suggesting that they were established settlements by the end of the Saxon period.

Land in Clifton hundred was held by several different individuals and Clifton was obviously a thriving village or town at the time. The survey records that Walter the Fleming *holds LANGFORD. It is assessed at 10 hides. There is land for 16 ploughs There are 12 villains, 7 bordars [and] 5 slaves with 9 ploughs. There are 2 mills ... there is pasture for 300 sheep ... [There is] woodland for 16 pigs.* At the time of the reign of Edward (pre-1066) *Leofwine, a thegn of King Edward, held this manor and there 1 sokeman had 1 hide* (Williams & Martin 1992: 579).

### 3.4 Medieval (1066-1500)

The nearby village of Langford was a Medieval settlement (HER 17135, 17136, 17137), with the main core of the Medieval village lying within c.700m of Clifton Sewage Treatment Works.

The remains of a deserted medieval village (DMV) are located at Stanford, c.800m to the northwest of the site (HER 1665; NGR TL 165 402 & TL 166 404). These remains comprise earthworks near Village Farm and related cropmarks further south, situated between the Stanford Lane and the River Ivel Navigation.

### 3.5 Post-Medieval (1500-1900)

The HER records the site of a chapel at Clifton, c.500m southwest of the site, adjacent to the River Ivel Navigation (HER 7301; NGR TL 167 402). The HER record states that this chapel is mentioned in deeds from 1638 and a marriage settlement from 1694. The fields are labelled as *Little Chappel Meadow* and *Great Chappel Meadow* on the Estate map of Viscount Torrington dating to 1745 (Bedfordshire and Luton Archives and Records Service map reference CRO X1/58).

Thomas Lilburne's map of the parish dated 1807, the parish Inclosure map of 1827 and the first edition Ordnance Survey map of 1882 all show the site as open fields, with similar boundaries as those currently in place. The 1882 map also shows the location of a watermill at Stanford, c.700m northwest of the sewage works (HER 2634; NGR TL 1713 4904).

A gravel pit is marked on Viscount Torrington's Estate map (1745) c.250m south-southwest of the sewage works (HER 9082; NGR TL 1745 3997). The first edition Ordnance Survey map (1882) shows another gravel pit c.200m south-southeast of the site (HER 2524; NGR TL 1771 3992) and the second edition OS map (1901) illustrates an *Old Gravel Pit* slightly further south (HER 2889; NGR 1767 3952).

### 3.6 Modern (1900-present)

Ordnance Survey maps from 1901 (2<sup>nd</sup> edition 1:2500) and 1924 (1:2500) also show the site as open fields. The land appears to have been used for arable farming until Clifton Sewage Treatment Works was constructed.

## **4 Results**

### **General**

Two areas were trenched. Trenches 1-3 were opened in the area where the haul road is being constructed, which was agricultural land under a wheat crop. Trenches 4-6 were located within the grounds of the existing sewage works. The trenches outside the sewage works all had a similar soil profile comprising about 300-350mm of ploughsoil overlying the natural gravel. Some of the plough furrows had cut into the natural by up to 50mm.

The topsoil within the sewage works compound was highly disturbed, presumably as a result of the construction of the works. Below this top covering there was a layer of silty subsoil, overlying the natural sandy gravels seen in the trenches outside the compound.

No archaeological features or artefacts were observed in any of the six trenches.

Detailed information regarding the trial trenches and their contents appears in Appendix 1.

## **5. Conclusions**

- 5.1 The evaluation at Clifton Sewage Works during the upgrading was required due to the extensive cropmarks seen on aerial photographs (see Section 2) of the land immediately adjacent to the works. With this concentration of cropmarks it was considered highly likely that ditches and pits would be exposed in the trial trenches.
- 5.2 When the trenches were opened no archaeological features were exposed. There are two possible explanations for the negative results of the evaluation. It is possible that there never were any features on the site, or that modern deep ploughing into the top of the natural gravels observed in the haul road area, and previous construction work in the compound, have destroyed all traces of earlier activity on the site. Considering the lack of finds it would seem more likely that prior to the construction of the sewage works the site was always open agricultural land.
- 5.3 Though no features or artefacts were found in the trenches it is still possible that ditches and pits continue from the cropmarks observed on the aerial photographs across areas of the site that were not trenched.
- 5.4 A high confidence rating can be attributed to the opening and interpretation of the deposits observed in the trenches during the evaluation.

## **6. Acknowledgements**

The writer is grateful to John Whitaker of Anglian Water for commissioning ASC to undertake the evaluation at Clifton Sewage Works. We would also like to thank Justin Akester the site manager for Skanska – Aker Kvaerner the main contractors on site, for his assistance in the smooth running of the project. The brief was produced by Lesley-Ann Mather who also monitored the fieldwork. The Project was managed by David Fell and the fieldwork was carried out by Chris Swain, Zoe Clarke and Nigel Wilson.

## **7. Archive**

7.1 The project archive will comprise:

1. Brief
2. Project Design
3. Initial Report
4. Clients site plans
5. Site records
6. List of photographs
7. B/W prints & negatives
8. CDROM with copies of all digital files.

7.2 The archive will be deposited with Bedford Museum

## 8. References

### *Standards & Specifications*

ALGAO 2003 *Standards for Field Archaeology in the East of England*. East Anglian Archaeology Occasional Paper 14.

Bedfordshire County Council 2007. *Brief for a Programme of Archaeological Investigation of Land at Clifton Sewage Treatment Works, Bedfordshire*. (Bedford)

EH 1991 *The Management of Archaeological Projects, 2<sup>nd</sup> edition*. English Heritage (London).

Hawtin T. 2007 *Land At Clifton Sewage Treatment Works, Near Langford, Bedfordshire*. Project design for archaeological evaluation (ASC Ltd) Ref 902/CSW/01

IFA 2000a Institute of Field Archaeologists' *Code of Conduct*.

IFA 2001 Institute of Field Archaeologists' *Standard & Guidance documents (Desk-Based Assessments, Watching Briefs, Evaluations, Excavations, Investigation and Recording of Standing Buildings, Finds)*.

### *Secondary Sources*


Simco, A. 1984. *Survey of Bedfordshire: The Roman Period*. Bedfordshire County Council & Royal Commission on Historical Monuments (England)


Soil Survey 1983 *1:250,000 Soil Map of England and Wales, and accompanying legend* (Harpندن).


Viatores 1964 *Roman Roads in the South-East Midlands* (London).


Williams, A & Martin, G.H. (eds) 1992. *Domesday Book: A Complete Translation*. Penguin Books (London)

## Appendix 1: Trench Summary Tables


Trench 1						
	Max Dimensions (m)					
	Length	13.5	Width	1.8	Depth	0.6
	Levels					
	Trench base north west		34.20m OD			
	Trench top north west		34.75m OD			
	Trench base south east		34.22m OD			
	Trench top south east		34.86m OD			
	NGR Co-ordinates					
	TL	17586 40378		TL	17586 40378	
	Orientation			NW-SE		
Reason for Trench			Evaluate haul road area			
Context	Type	Description and Interpretation	Max Width (m)	Max Thckn (mm)	Depth BGL (mm)	
100	Deposit	Ploughsoil	1.8	450	0-450	
101	Deposit	Natural gravel sandy gravel	1.8	-	>450	


Trench 2						
	Max Dimensions (m)					
	Length	15.0	Width	1.8	Depth	0.45
	Levels					
	Trench base north east		33.89m OD			
	Trench top north east		34.31m OD			
	Trench base south west		33.95m OD			
	Trench top south west		34.42m OD			
	NGR Co-ordinates					
	TL	17661 40378		TL	17650 40369	
	Orientation			NE-SW		
Reason for Trench			Evaluate haul road area			
Context	Type	Description and Interpretation	Max Width (m)	Max Thckn (mm)	Depth BGL (mm)	
200	Deposit	Ploughsoil	1.8	400	0-400	
201	Deposit	Natural sandy gravel	1.8	-	>400	

Trench 3						
	Max Dimensions (m)					
	Length	15.0	Width	1.8	Depth	0.4
	Levels					
	Trench base north west		33.54m OD			
	Trench top north west		33.89m OD			
	Trench base south east		33.25m OD			
	Trench top south east		33.67m OD			
	NGR Co-ordinates					
	TL	17713 40380	TL	17725 40371		
	Orientation		NW-SE			
Reason for Trench		Evaluate haul road area				
Context	Type	Description and Interpretation	Max Width (m)	Max Thckn (mm)	Depth BGL (mm)	
300	Deposit	Ploughsoil	1.8	350	0-350	
301	Deposit	Natural sandy gravel	1.8	-	>350	

Trench 4						
	Max Dimensions (m)					
	Length	9.0	Width	1.6	Depth	0.55
	Levels					
	Trench base north east		35.5m OD			
	Trench top north east		35.15m OD			
	Trench base south west		35.56m OD			
	Trench top south west		36.08m OD			
	NGR Co-ordinates					
	TL	17560 40339		17556 40331		
	Orientation		NE-SW			
Reason for Trench		Evaluate compound area				
Context	Type	Description and Interpretation	Max Width (m)	Max Thckn (mm)	Depth BGL (mm)	
400	Deposit	Topsoil	1.6	200	0-200	
401	Deposit	Mid yellowish brown silty clay	1.6	350	200-550	
402	Deposit	Natural sandy gravel	1.6	-	>550	



Trench 5						
	Max Dimensions (m)					
	Length	16.2	Width	1.6	Depth	0.35
	Levels					
	Trench base east		34.76m OD			
	Trench top east		35.00m OD			
	Trench base west		34.76m OD			
	Trench top west		35.21m OD			
	NGR Co-ordinates					
	TL	517623 240355		TL	517607 240355	
	Orientation			E-W		
Reason for Trench			Evaluate compound area			
Context	Type	Description and Interpretation	Max Width (m)	Max Thckn (mm)	Depth BGL (mm)	
500	Deposit	Topsoil	1.6	200	0-200	
501	Deposit	Mid yellowish brown silty clay	1.6	150	200-350	
502	Deposit	Natural sandy gravel	1.6	-	>350	

Trench 6						
	Max Dimensions (m)					
	Length	15	Width	1.6	Depth	0.8
	Levels					
	Trench base east		34.03m OD			
	Trench top east		34.87m OD			
	Trench base west		34.25m OD			
	Trench top west		35.31m OD			
	NGR Co-ordinates					
	TL	17671 40351		TL	17656 40351	
	Orientation			E-W		
Reason for Trench			Evaluate compound area			
Context	Type	Description and Interpretation	Max Width (m)	Max Thckn (mm)	Depth BGL (mm)	
600	Deposit	Disturbed topsoil layer from the construction of the existing sewage works.	1.6	480	0-480	
601	Deposit	Mid grey brown humic silt	1.6	300	480-700	
602	Deposit	Natural sandy gravel	1.6	-	>700	

## Appendix 2: List of Photographs

SITE NAME: Clifton Sewage Works			SITE NO/CODE: 902/CSW
Shot	B&W	Digital	Subject
1	√	√	Trench 6
2	√	√	Trench 5
3	√	√	Trench 4
4	√	√	Trench 3
5	√	√	Trench 2
6		√	General view of the haul road area
7		√	General view of the haul road area
8	√	√	Trench 1

### Appendix 3: ASC OASIS Form

PROJECT DETAILS			
Project Name:	Clifton Sewage Works, Clifton, Bedfordshire		
Short Description:	<i>During May and June 2007, an evaluation was undertaken at Clifton Sewage Works, Bedfordshire, in advance of upgrading of the works. Aerial photographs of the area surrounding the sewage works show a concentration of cropmarks. It was considered likely that prehistoric ditches associated with these cropmarks may have been uncovered within the development area. However no archaeological features were found within the evaluation trenches.</i>		
Project Type: (indicate all that apply)	Trial Trenching		
Site status: (eg. none, SAM, Listed)	None	Previous work: (eg. SMR refs)	None
Current land use:	Agricultural/ industrial	Future work: (yes / no / unknown)	No
Monument type:	n/a	Monument period:	n/a
Significant finds: (artefact type & period)	None		
PROJECT LOCATION			
County:	Bedfordshire	OS reference: (8 figs min)	TL 1767 4035
Site address: (with postcode if known)	Clifton Sewage Works, Bedfordshire		
Study area: (sq. m. or ha)		Height OD: (metres)	34.0m aOD
PROJECT CREATORS			
Organisation:	Archaeological Services & Consultancy Ltd		
Project brief originator:	Bedfordshire County Council	Project design originator:	ASC Ltd
Project Manager:	David Fell	Director/Supervisor:	Nigel Wilson
Sponsor / funding body:	Anglian Water		
PROJECT DATE			
Start date:	14/05/2007	End date:	05/06/2007
PROJECT ARCHIVES			
	Location	Content (eg. pottery, animal bone, files/sheets)	
Physical:	n/a		
Paper:	Bedford Museum	Trench record sheets, Levels sheet	
Digital:	Bedford Museum	1 CD containing Project Design, Report and Digital Images	
BIBLIOGRAPHY (Journal/monograph, published or forthcoming, or unpublished client report)			
Title:	Clifton Sewage Works, Bedfordshire.		
Serial title & volume:	Unpublished Evaluation Report (902/CSW/02)		
Author(s):	Nigel Wilson		
Page nos	n/a	Date:	June 2007