**A.P.A.C. Ltd.**

Archaeological Perspectives Analysis Consultancy

# ARCHAEOLOGICAL

# WATCHING BRIEF

WB/JB/10

## Angidy Ironworks, Tintern.

**J&B Saunders**

Dr N.Phillips

01/02/11

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Cover photograph. The work in progress

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# 1 Non Technical Summary

*On the 4th June 2010, Dr. N. Phillips of A.P.A.C. Ltd was appointed to undertake a watching brief during clearance work on a stream identified as the outfall for drainage from the Abbey Tintern Furnace Site, Tintern, Monmouthshire.*

*The archaeological watching brief was commissioned by Br B Saunders of Furnace Cottages Tintern and undertaken by Dr N Phillips of A.P.A.C. Ltd.*

*The work continued a program to de-silt the drainage system from the Angiddy Ironworks instigated earlier as part of work being undertaken by the AONB.*

*This project is separate from that of the AONB work and was instigated in an attempt to better advise the work of the AONB, as to a more profitable and efficient approach.*

*The project succeeded in further increasing the drainage from the furnace area and improving the understanding of the problem and its solution.*

# 2 Introduction

In February 2005 Monmouthshire County Council; owners of The Angidy Ironworks, commissioned a Conservation Plan Brief, for both Clydach and Angidy Ironworks the purpose of which was to provide a management strategy to promote and preserve these nationally significant, heritage assets.

The strategy compiled considers the site of The Angidy Ironworks as part of the wider tourism potential in this Area of Outstanding Natural Beauty, (AONB).

> The Conservation Plan was prepared in anticipation of a bid, '*Over looking the Wye'*, to the Heritage Lottery Fund by a partnership of interested organisations led by the Wye Valley AONB Joint Advisory Committee. This seeks the enhancement and preservation of the key landscape and archaeological features of the AONB, whilst improving the visitor experience through the better interpretation and upgraded facilities.
>
> (MCC 2005, 5)

The single consultative document was intended to provide:

- clear guidelines for testing an evaluation of material changes to the site or its structures
- Preparing long-term conservation programs for the site and its components.
- Making day to day decisions with regard to maintenance and repair.
- Drawing up plans to enhance the potential contribution of the site in relation to the local community, the local economy and particularly the Wye Valley AONB.

(MCC 2005, 6)

In order pursue these aims a list of general conservation principles were included in the plan, (MCC 2005, 29-36).

Unfortunately, none of the work proposed for the Angidy Ironworks site; as laid out in (MCC 2005), was possible due to the presence of standing water over the lower floor. Indeed the presence of the standing water was causing problems as far back as the 1979-81 excavations, where 'full excavation' was impossible due to water levels, (Pickin 1982, 12 & Probert 1982, 26).

In the summer of 2007, Dr N. Phillips A.P.A.C. Ltd, undertook a watching brief at the site of and adjacent to the Angidy Ironworks, Phase 1, (WB04/AONB/07. A.P.A.C. Ltd 2007). That watching brief concerned itself with excavations south of the Devauden/Tintern road designed to locate and unblock the outfall from the furnace site. This phase 1 work was partially successful in that the outfall was located but unsuccessful in that the outfall remained blocked. Furthermore, the blockage was to such an extent as to force the flow of the outfall to run above the original drainage culvert; the culvert itself having been buried in subsequent silting.

In April of 2010, Wye Valley AONB started a large scale project to address the problem of drainage as part of the consolidation and conservation work outlined above. The Project Officer in charge was Kate Biggs and Dr. N Phillips was subcontracted to undertake the watching brief.

The main thrust to alleviate the drainage system was to reduce the silt in the wheel pit, (at the upstream end of the blockage). Discussions were undertaken in an attempt to indicate the futility of this approach and some lee-way was made, resulting in the AONB funding a two day attempt to de-silt the outflow, WB/AONB2/09. The limited work produced a positive result with recommendations:

> The work to clear the culvert has already produced a positive effect in helping to drain the furnace floor. It is believed that further clearance is necessary to complete the work; in order to best undertake the conservation planned.
>
> In order to do this, the clearance must be made from above the stream rather than in it and more preparation must be made to remove the spoil form the sides of the excavation.
>
> *(ibid.)*.

Unfortunately, the recommendations were not persuasive to the project officer; as a consequence, the present undertaking was privately financed by the concerned residents of the cottage adjoining the site.

The project sought to build on the benefits of the approach undertaken in WB/AONB2/09; to unblock the outfall by further clearing the build up of silt within it. This would then drop the water level and encourage the outfall to flow back through the culvert ultimately improving drainage from the furnace floor.

## 2.1 Location and scope of work

Angidy Ironworks, SO5200, is situated south of the Angidy stream, in the steep sided Angidy valley west of Tintern, Monmouthshire, *fig 01*. If travelling north from Chepstow to Monmouth on the A466, the first left turn after Tintern Abbey is the lane to Llanishen which passes by the furnace site after approximately 4 kilometres.

The Angidy Ironworks site is a Scheduled Monument, Cadw reference MM197. It is lozenge shaped measuring some 100m by 35m. However, excavation work undertaken during this watching brief was concentrated on land south of the Ironworks site on land bounded by the garden of Furnace Cottages and made up waste ground (Cinder Bank, DBA/TAP/08 p20 A.P.A.C. Ltd. 2008) separating the culvert from the Angidy River, *fig 02*. This land is at present outside of the scheduled area.

The culvert itself is recorded on Ordnance Survey maps as spring NGR 514.002 and it discharges some 200m east into the Furnace pond NGR 515.002, (Saunders 2009).

The scope of the work is to undertake a watching brief during operations to clear silt from the blocked culvert. The clearance will seek to reach the natural bedding of the stream surface but a restriction of 0.5m has been imposed due to the nature of the terrain and the working parameters of the mechanical digger within that terrain.

### 2.2 Geology and topography

The site is located on the solid geology of the Upper Old Red Sandstone, Tintern Sandstone Group with a drift deposit of Alluvium (OS 1981).

The topography of the site location is a narrow steep sided, wooded valley, centred on the Angidy stream which generally falls in an easterly direction to the Wye at Tintern. The woodland, some of which is owned and managed by the Forestry Commission is a mixture of deciduous and coniferous trees. A broad fire break occurs south west of the site which opens up the aspect of the location.

The site is surrounded by SSSIs and LNRs but is itself not designated

### 2.3 Archaeological and historical background

As mentioned above, the site has had some archaeological investigation in relation to other works in the vicinity.

There have been three archaeological episodes at the adjacent Ironworks site:

- An excavation centred on the leat and the wheel pit, undertaken by Parr and Tucker in 1975, (Parr & Tucker 1975 V9 .2).
- A second, much larger scale excavation conducted by John Pickin for Gwent County Council between 1979 and 1981.
- The third, an evaluation of the leat above the Angidy Furnace, Phillips EV/TAP/08. A.P.A.C. Ltd.

Further archaeological work has been undertaken in the immediate vicinity:

- A watching brief in the north east corner of the garden, to find and clear the drainage culvert from the furnace. Phillips WB04/AONB/07. A.P.A.C. Ltd, 2007.
- A desk top assessment on the archaeological resources of the Angidy Valley. Phillips. DBA/TAP/08. A.P.A.C. Ltd, 2008.
- A topographical and geophysical survey of the land belonging to Furnace Cottages in which the area of this watching brief was included, SC/JBT/09, 2009.
- An attempt to unblock the outfall of the culvert, WB/AONB2/09.

The historical background to the area is well documented in the above reports as well as in the Monmouthshire County Council 2005 Angidy Ironworks Conservation Plan. Rees provides a very detailed account of the *Iron Works at Tintern* with good primary sourcing, (Rees) 1968. A more easily accessible, general background can be found in *The Water Powered Industries of the Lower Wye Valley*, Coates 1992.

## 3 Aims and Objectives

### 3.1 Watching Brief

The aim of the watching brief was to preserve by record, within the resources available, any archaeological deposits uncovered during groundwork.

The watching brief would also ensure that: in the event of archaeological resources of significance being discovered requiring treatment beyond the remit of the watching brief; then steps would be implemented to ensure that their treatment would be undertaken within the standards recommended by the IFA.

# 4 Watching Brief Methodology

## 4.1 Fieldwork

The watching brief, undertaken on Saturday 5th June 2010, consisted of an archaeological fieldworker being present during groundwork at the site.

All groundwork was undertaken using a tracked mini digger fitted with a 600 mm non toothed bucket.

The groundwork started by removing further fill from the downstream end of the culvert; working up towards the outfall.

The clearance was then undertaken by removing the silt from the stream bed and depositing the spoil on the bank.

Once the full length of the stream had been scraped, the machine was tracked back to the culvert outfall and a further amount of silt was removed.

## 4.2 Recording

Where possible and with due regard to health and safety issues; features uncovered, were cleaned back to provide a reasonable surface for photographic recording.

All photographs taken have been given a unique number and listed in the archive of this report. The archive includes a contact sheet and a digital copy of all the photographs.

All features uncovered were given a brief description in the site log. Any observation of interesting or anomalous data was also recorded for later interpretation.

## 4.3 Finds

Two shards of glass Onion Bottle bases were recovered from the silt within the mouth of the outfall.

# 5 Watching Brief Results

## 5.1 Soils and ground conditions

Work on the site was conducted in a single day and the weather was quite favourable. However, the biggest problem during this undertaking was the necessity of digging in the water. This makes observation difficult.

As in WB/AONB2/09 further complication of this undertaking was the restricted access of the stream itself which did not allow for the spoil to be removed very far from the stream bank.

### 5.2 Description

This attempt to; further de-silt the culvert, had a positive affect in that a further drop in water level was achieved within the culvert. This reduction allowed access to the culvert itself which had been previously denied. Plate 01 shows a view up the culvert and the extent of the silt that had built up over the years.

### 5.3 Finds

Two pieces of dark green/black Onion Bottle washed out of the silt at the mouth of the outfall. The smallest Plate 02, had a 4½inch diameter base, whilst the larger Plates 03 & 04 had a 7 inch diameter base.

## 6 Discussion and Interpretation

### 6.1 Reliability of field investigation

Working in water with a mechanical digger does not make observation very easy. Archaeological resources are usually identified on the spoil heap rather than *in situ* or by the sound of their discovery on contact with the bucket of the digger. That said; investigation of the spoil deposits and excavated sections, where possible, revealed that the remarkable paucity of finds was representative of the archaeology and not the watching brief process.

### 6.2 Overall interpretation

The earlier attempt, WB/AONB2/09, to de-silt the outfall culvert had shown that the work was successful in reducing the level of water in the Iron works. This second attempt had a less noticeable affect within the furnace site but did actually open the outfall to allow access to be possible.

The increase in access allowed a greater understanding of the nature of the problem. The amount of silt within the culvert; even in Plate 01 there is a further <0.4m beneath the surface, illustrates how mammoth a task it will be to unblock the culvert. The fact that a reduction of the silt within the culvert did not greatly affect the Iron works floor shows that there is a bund of silt between the two that is holding the flow, and water level back.

The next step has to be further work to reduce this blockage. Either by pressure washing up stream or by creating access holes into the culvert at intervening sites between the wheel pit and the outfall and then clearing from there.

## 7 Acknowledgements

I am indebted to Mr and Mrs Saunders for access to their land, their wealth of knowledge about the site and there desire to intervene to prevent disaster. Further appreciation goes to the machine operator, Richard Ball, a man who work Satardays.

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Rees, W., 1968 *Industry before the industrial Revolution*

# ARCHIVE COVER SHEET

***ANGIDY IRONWORKS, TINTERN***

| | |
|---|---|
| Site Name: | Angidy Ironworks |
| Site Code: | WB/JB/09 |
| PRN: | - |
| NPRN : | - |
| SAM: | - |
| Other Ref No: | A.P.A.C. Ltd Report No. 135 |
| NGR: | SO 51415 00236 |
| Site Type: | Industrial |
| Project Type: | Watching Brief |
| Project Officer: | Neil Phillips |
| Project Dates: | January 2011 |
| Categories Present: | N/A |
| Location of Original Archive: | A.P.A.C. Ltd |
| Location of duplicate Archives: | Monmouth Museum |
| Number of Finds Boxes: | N/A |
| Location of Finds: | N/A |
| Museum Reference: | N/A |
| Copyright: | A.P.A.C. Ltd |
| Restrictions to access: | None |

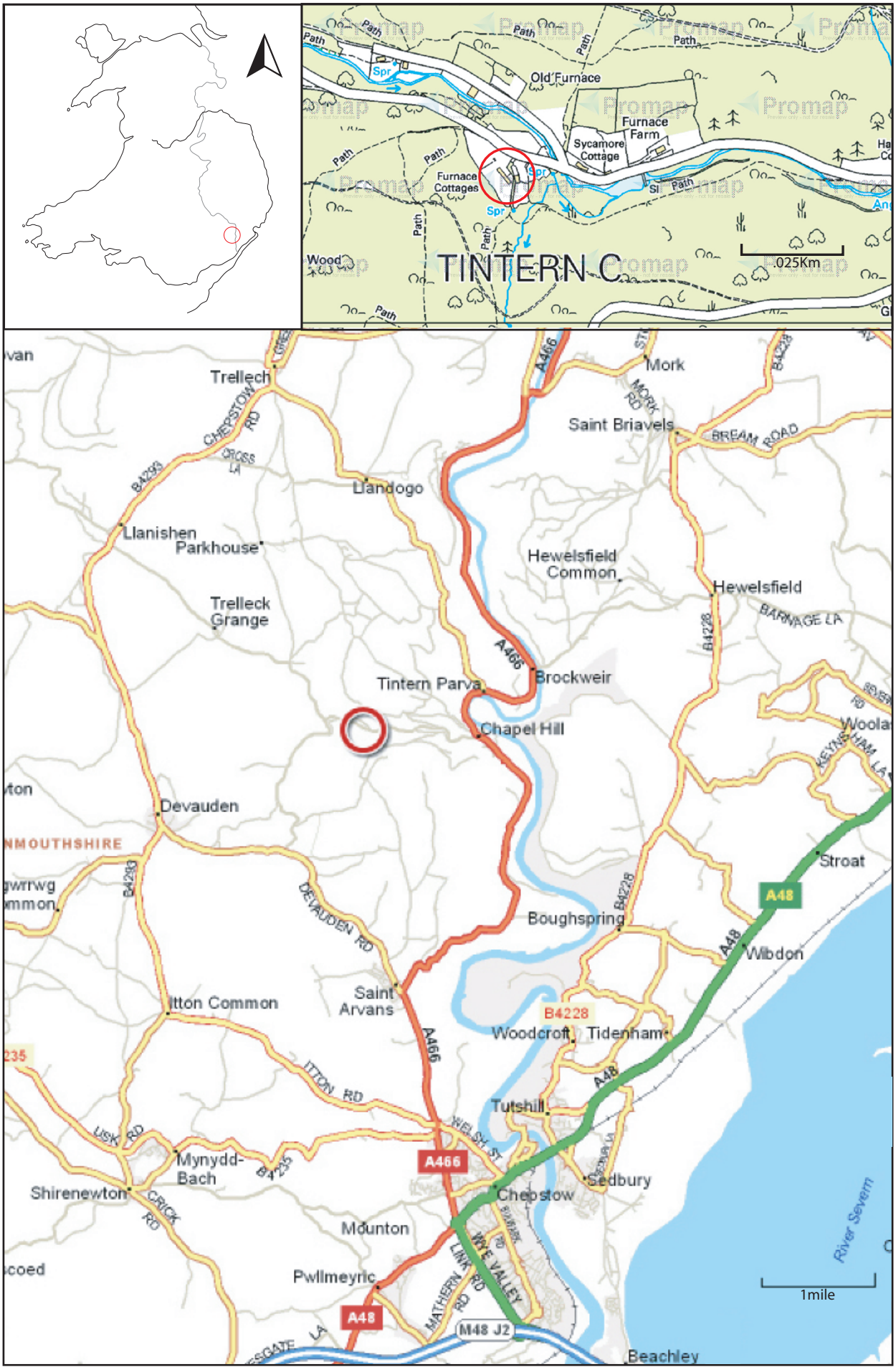
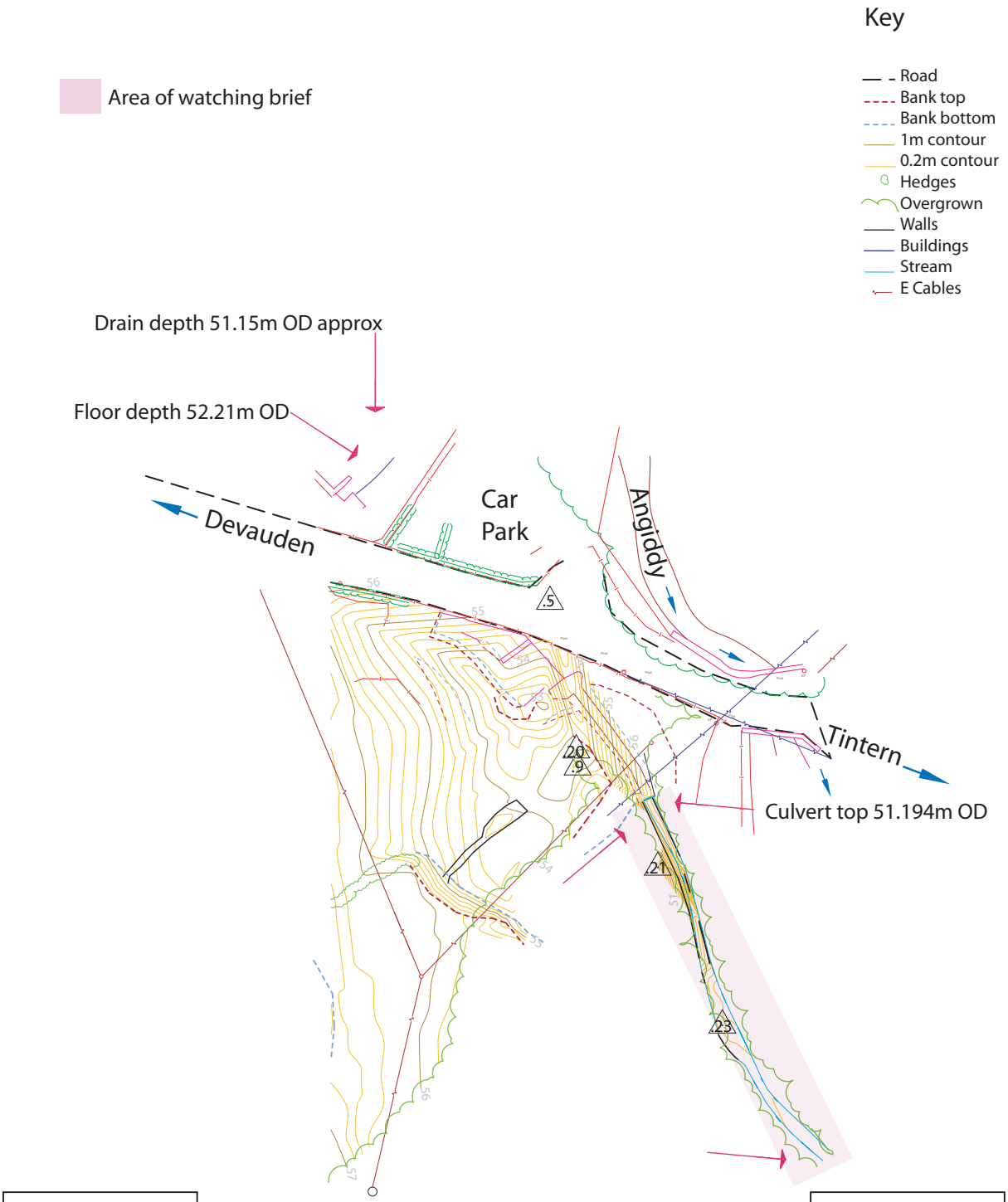



Fig 01: Location




| | | | |
|---|---|---|---|
| SITE: Furnace Cottages, Angiddy, Tintern, Monmouthshire. | | | |
| JOB No: SC/JBT/09 | SCALE 0 5 10 20 30 40 50 m | NEW SURVEY 0.65 Ha (Combined) 1.42 Ha | A.P.A.C. Ltd, 36 Hatherleigh Rd, Abergavenny, Monmouthshire. NP7 7RG. Tel: 07734962919 |
| TITLE: Topographic Survey Composite | STATION COORDINATES | N | apac.philips@btinternet.com |
| DRAWN BY: N Phillips | | | |
| DATE: 30/12/09 | NOTES: Shaded area: adapted from John Vincent Surveys Ltd. 2007. Levels related to Ordnance Survey GPS DATUM | | |

STATION COORDINATES

| | | | |
|---|---|---|---|
| 5 | E 351366.513 N 200263.037 Z 57.244 | 9 | E 351406.748 N 200241.809 Z 54.219 |
| 20 | E 351343.747 N 200273.270 Z 58.958 | 21 | E 351344.080 N 200195.583 Z 62.652 |
| 23 | E 351260.337 N 200260.337 Z 55.273 | 24 | E 351329.360 N 200260.483 Z 55.251 |
| 25 | E 351364.495 N 200229.697 Z 60.524 | 26 | E 351406.602 N 200243.709 Z 54.422 |
| 27 | E 351345.328 N 200239.025 Z 62.793 | 28 | E 351415.722 N 200230.593 Z 52.126 |
| 29 | E 351328.442 N 200274.381 Z 63.746 | 30 | E 351422.947 N 200212.934 Z 50.534 |

adapted from Phillips 2009

Fig 02: Location


Plate 01: Silting within outfall


Plate 02: Small Onion Bottle


Plate 03: Large Onion Bottle


Plate 04: Large onion Bottle