
AFON GANOL TIDAL GATES, PENRHYN BAY ARCHAEOLOGICAL WATCHING BRIEF: GI PROGRAMME



Archaeological Watching Brief

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AFON GANOL TIDAL GATES,
PENRHYN BAY
ARCHAEOLOGICAL WATCHING BRIEF:
GI PROGRAMME (G2143)

Prepared for

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AFON GANOL TIDAL GATES, PENRHYN BAY

ARCHAEOLOGICAL WATCHING BRIEF:

GI PROGRAMME

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**AFON GANOL TIDAL GATES, PENRHYN BAY:
ARCHAEOLOGICAL WATCHING BRIEF – Ground Investigation Programme**

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AFON GANOL TIDAL GATES, PENRHYN BAY: ARCHAEOLOGICAL WATCHING BRIEF – Ground Investigation Programme

Summary

Gwynedd Archaeological Trust (GAT) was commissioned by Black & Veatch Ltd to complete an archaeological watching brief during ground investigation (GI) works associated with the Afon Ganol Tidal Gates Replacement Scheme, Penrhyn Bay, Conwy County Borough (centred on NGR SH82968156). The GI programme comprised three boreholes, two of which were located within the Rhos on Sea Golf Club, either side of the tidal gates (Boreholes 01 and 02), and the third (Borehole 03) on the foreshore, within a fishtail groyne.

Borehole 01 contained up 5.0m of made ground (imported material that included the modern sea wall); Borehole 02 comprised mainly sand, beneath topsoil and imported hardcore. No evidence for peat deposits were identified within the confines of the two boreholes. Borehole 03 was not completed due to extensive concrete within the fishtail groyne that prohibited drilling.

In addition to the boreholes, GAT was commissioned by the Environment Agency to inspect the tidal gates, if accessible. GAT was unable to access the gate at this time; it is recommended that the tidal gate/outfall chamber structure is investigated further during the main engineering works as part of the watching brief mitigation.

1.0 INTRODUCTION

The GI investigation area was located at the Afon Ganol Tidal Gate, Penrhyn Bay, Conwy County Borough (centred on NGR SH82968156; figure 01).

The GI works comprised:

- Boreholes BH01 to BH03

Boreholes 01 and 02 were located either side of the tidal gate structure, within the Rhos-on Sea golf club (figure 01). The tidal gate (NPRN **308,563**) includes an outfall chamber enclosed in concrete with a mesh decking (plate 02), secured from public access via a 1.2m galvanised palisade fence. The chamber is partitioned in two with timber gates and is linked to a precast concrete pipe that continues under Marine Drive Road and along a fishtail groyne into the sea (plate 04).

Borehole 03 was located within the fishtail groyne on the foreshore (figure 01).

The tidal gates are to be replaced as part of an Environment Agency scheme as they were identified to be in an “advanced state of degradation” during the Afon Ganol Outfall Inspection completed by Bullen Consultants in 2000 (quoted in CAP Ltd. Report **206**, 2001).

The watching brief has been conducted in response to the Cambrian Archaeological Projects Ltd. (CAP) desk based assessment of the tidal gates, completed in 2001 (CAP Ltd. Report **206**, 2001), which recommended “a watching brief during any ground disturbance work associated the proposed modification (of the gates)” (*ibid.*: 06). The desk based assessment identified the potential for “archaeologically significant features in the vicinity of the tidal gates” associated with maritime and estuarine activity, as well as the potential for organic remains, including peat deposits (*ibid.*; known submerged peat deposits are listed in the Gwynedd Archaeological Trust Historic Environment Record at NGR SH82608120 (PRN **16,581**), c. 410.0m to the southwest) and that the replacement scheme could expose preserved and previously unrecorded archaeological activity in the immediate vicinity. The report also suggested that the lower courses of the outfall chamber attached to the tidal gates were contemporary with the construction of the first sea wall by General Owen Williams (c.1848) and that the material used may formerly have been part of the Afon Ganol quay. CAP Ltd. suggested that an inspection of the tidal gates during replacement works and a comparison with the extant quay wall at Odstone may confirm this hypothesis (CAP Ltd. Report **206**: 05).

A mitigation brief was not been prepared for this work by **Gwynedd Archaeological Planning Services** (GAPS), but the GAPS archaeologist was informed of the GI works. Reference was made to

the guidelines specified in Standard and Guidance for Archaeological Watching Brief (Institute for Archaeologists, 1994, rev. 2001).

2.0 BACKGROUND

A detailed archaeological background for the tidal gates replacement scheme was completed by CAP Ltd. in 2001 (CAP Ltd. Report 206).

Afon Ganol formed the boundary between the Parishes of Llandudno and Llandrillo-yn-Rhos. The first edition Ordnance Survey (OS) map of the area shows (1871-1877) shows the sea wall (constructed c.1848) in existence and marks the outfall as a sluice. On both the first and second edition OS maps (1871-1877 and 1900 respectively), the former course of the main river channel is visible, prior to canalisation before the publication of the third edition in 1912. The existing outfall chamber/tidal gates superstructure was constructed in 1992. This superstructure subsumed the existing wooden tidal gates.

3.0 METHODOLOGY

3.1. Ground Investigation Works

- All attended boreholes were excavated using a cable percussion boring rig. In advance of the rig, the borehole locations were excavated by hand to a depth of between c.0.80m and 1.20m to inspect for services and/or hazards.

3.2 Archaeological Watching Brief

- A photographic record was maintained throughout, using a digital SLR camera set to maximum resolution.
- Notations were made of all subsurface deposits.
- The archive is held by GAT under an appropriate project number (**G2143**).

4.0 RESULTS

The location of the individual boreholes monitored by GAT as an archaeological watching brief can be found in Figure 01. Boreholes 01 and 02 (BH01 and BH02) were located either side of the outfall chamber/tidal gates within a landscaped area belonging to the Rhos-on-Sea golf club. Borehole 03 (BH03) was located atop the fishtail groyne on the foreshore, next to the outfall.

BH01 (figures 01 & 02; plate 05)

Description

BH01 was located c.7.0m west of the outfall chamber (plate 05). The initial 5.0m within the borehole comprised imported material/sea wall defences. No organic material was identified

Interpretation

The borehole indicated the extent of landscaping/sea defence material extant at this location. Due to the confined nature of the borehole, the composition of the sea wall could not be determined. No archaeological activity or organic material were identified within the confines of the borehole.

BH02 (figures 01 & 02; plates 06 - 08)

Description

BH02 was located c.15.0m west of the Rhos-on-Sea golf club clubhouse within a lawned area (plates 06 and 07). The borehole was initially hand dug to a depth of 0.80m: the upper 0.25m was a dark grey-brown topsoil, followed by a 0.10m depth of gravel-rich hardcore (imported material), above a coarse orange-yellow sand that continued past the 0.80m depth to 1.50m below ground surface level (BGL). Between 1.50m and 3.50m was a yellow-grey sand-clay, followed by sand and gravel to 4.00m

BGL. The remainder of the borehole contained medium to coarse grained sand from 4.00m to 8.00m BGL (plate 08). No peat deposits were identified within the borehole.

Interpretation

No archaeological activity or organic material were identified within the confines of the borehole. All identified deposits beneath the imported hardcore were tidal and/or fluvial in origin.

BH03 (figures 01 & 02; plates 09 and 10)

Borehole 03 was not completed due to the presence of rock armour that prohibited the use of the cable percussion rig.

5.0 CONCLUSIONS

Two of the three selected boreholes were completed, either side of the existing tidal gates/outfall chamber. No archaeological activity or organic material were identified within the confines of either example: BH01 contained material associated with the local sea defences, BH02 contained mostly tidal/fluvial deposits associated with the river mouth.

The tidal gates/outfall chamber were inaccessible at this time and no additional information was recovered that updated the CAP Ltd. report from 2001 (CAP Ltd. Report **206**). It is recommended that the tidal gate/outfall chamber structure is investigated further during the main engineering works as part of the watching brief mitigation. Discussion with *Black & Veatch Ltd* has confirmed that these works will include structural alterations to the existing gate structure and an associated excavation on the west site of the gate to accommodate the engineering programme. This excavation will include a batter several metres wide, excavated from the existing ground level.

The information from the two boreholes completed may assist in the understanding of exposed stratigraphy during any future archaeological mitigation phases.

6.0 BIBLIOGRAPHY AND SOURCES

Historic Environment Record, Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, Gwynedd LL57 2RT

Milne, H. 2001. Cambrian Archaeological Projects Ltd. Report **206**: *Afon Ganol Tidal Gates Penrhyn Bay – Archaeological Desk based Assessment*.

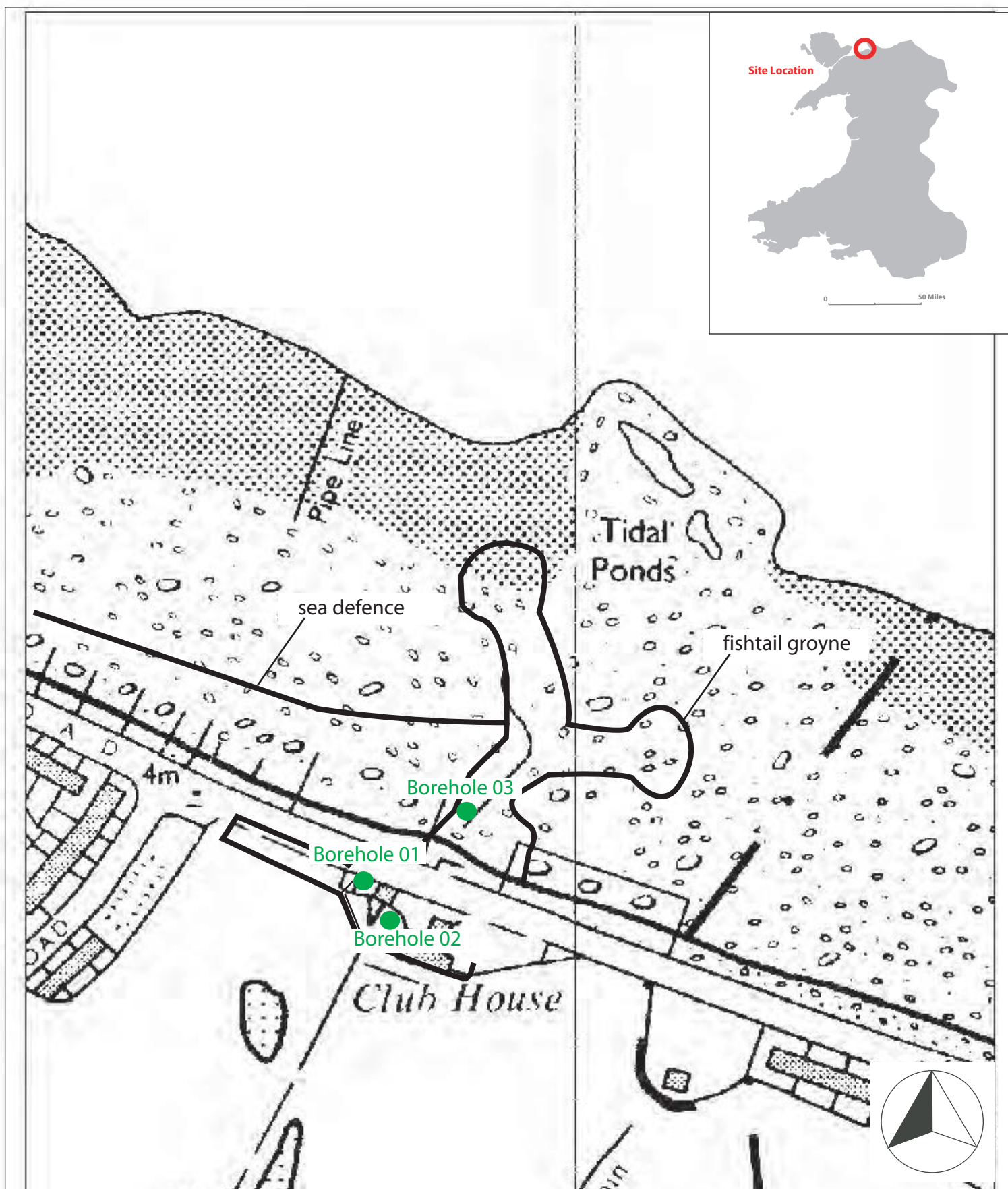


Figure 01: Location of Ground Investigation area monitored by Watching Brief G2143. The Borehole locations are highlighted in **GREEN**. Boreholes 01 and 02 were located within the Rhos-on-Sea golf club, either side of the canalised river/tidal gates; Borehole 03 was located on the fishtail groyne sea defence.

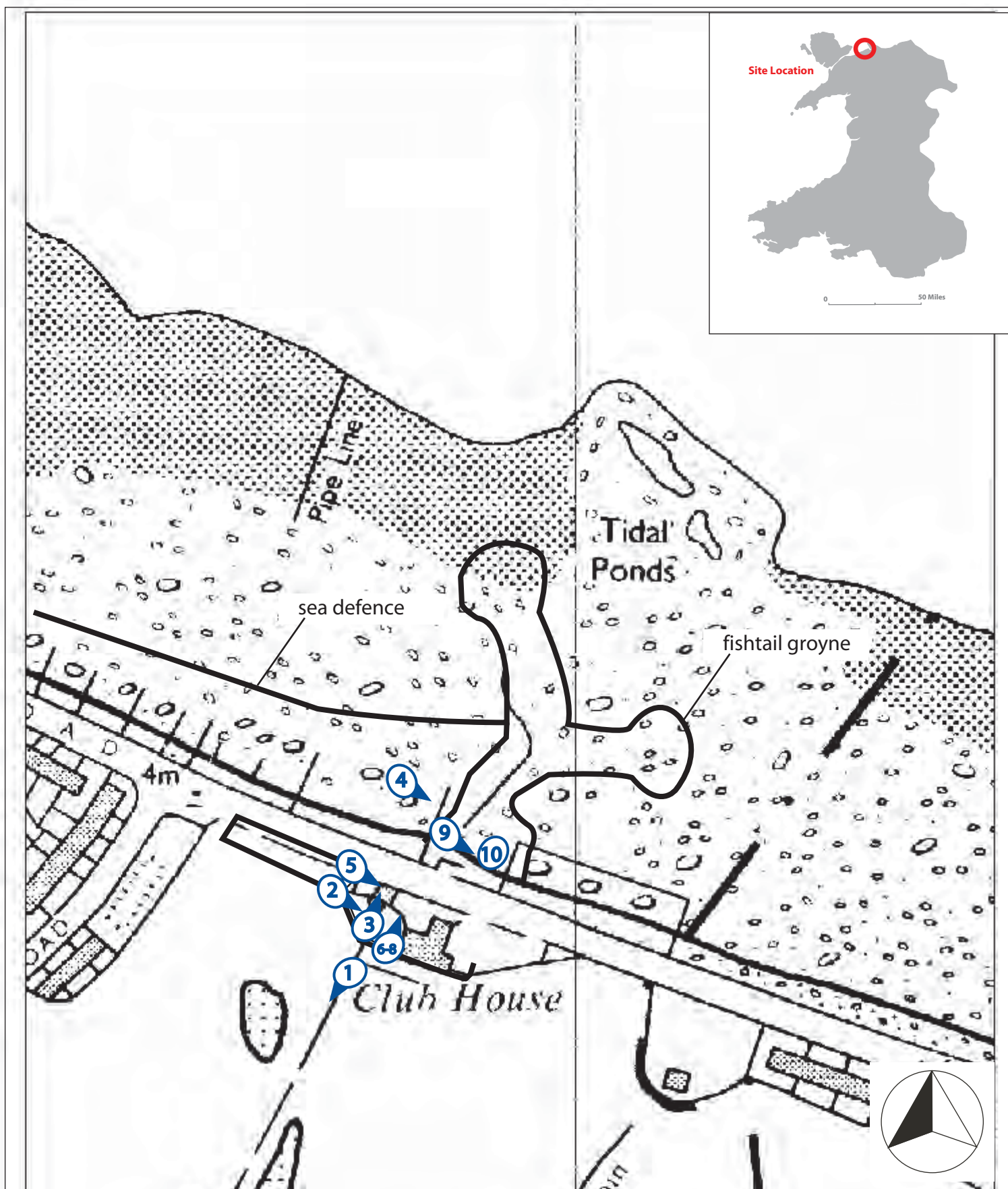


Figure 02: Location of plates within Ground Investigation area monitored by Watching Brief G2143.



Plate 01 - View south of the canalised Afon Ganol that leads to the tidal gates. The Rhos-on-Sea golf club can be seen either side of the river



Plate 02 - View southeast of the current tidal gates/outfall chamber structure. The mesh decking is an early 1990s addition and masks the original structure



Plate 03 - View north of tidal gates/outfall chamber, detailing the timber mitre gates that the lead into the outfall chamber. The canalised Afon Ganol drains into this chamber. The outfall chamber is sub-divided into two smaller chambers by a partition wall (not visible). The second chamber is entered through a timber flap gate hung from a timber frame mounted on the downstream face of the partition wall.

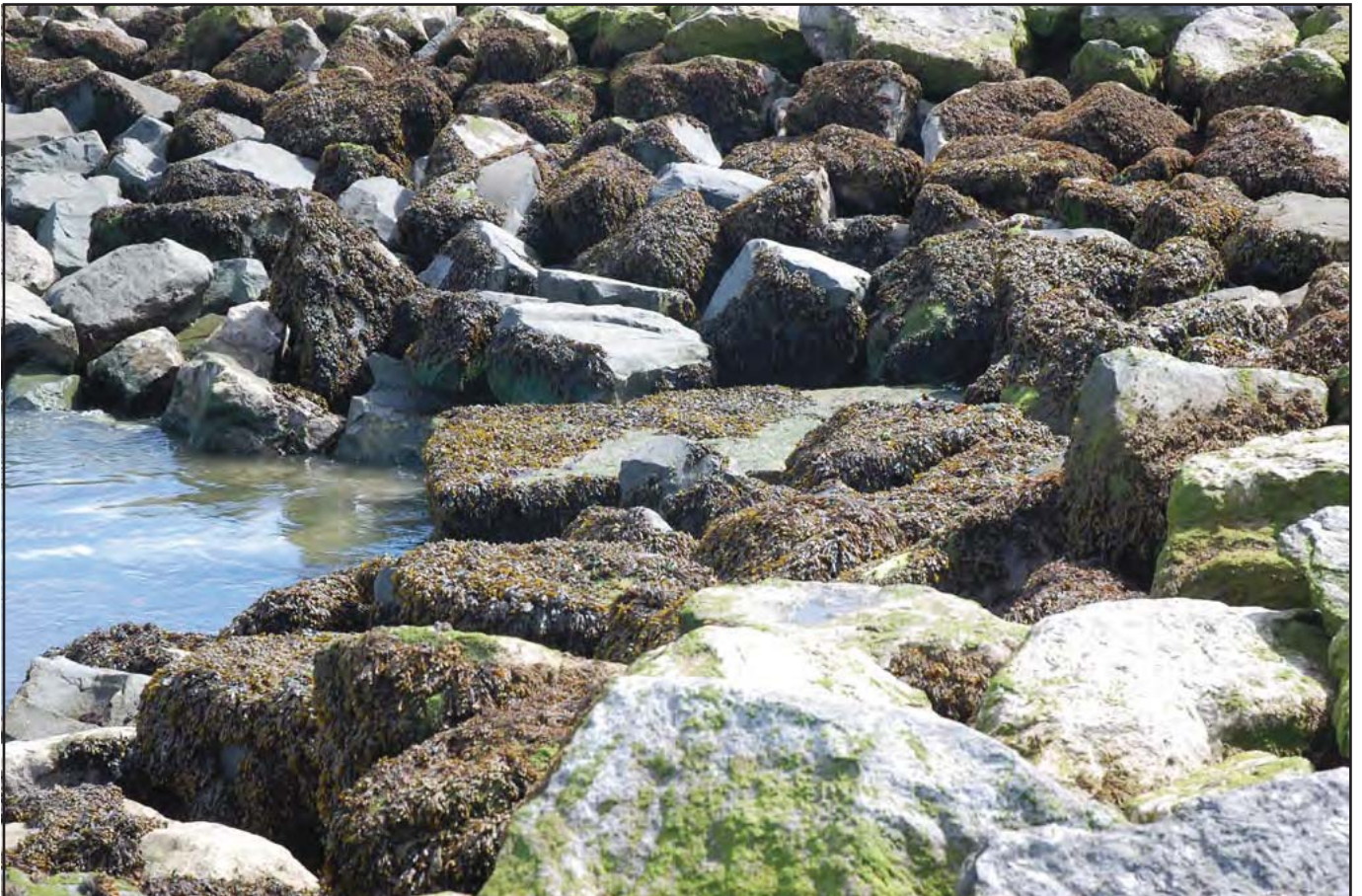


Plate 04 - View east of the outfall pipe that is linked to the tidal gates, as it enters the sea via the foreshore



Plate 05 - View south of the location of Borehole 01, which was located within a landscaped area within the golf club. The cable percussion rig can be seen on the left side of the image. The borehole contained imported seawall defence material.



Plate 06 - View north of Borehole 02 prior to excavation. The cable percussion rig can be seen in the foreground, the tidal gates in the background. Afon Ganol is on the left side of the image.



Plate 07 View northeast of Borehole 02, detailing the cable percussion rig in action. The initial 0.35m was topsoil and imported hardcore, followed by tidal and/or fluvial sand/silts



Plate 08 - Close-up view of material from borehole: detailing a deposit of sand recovered from 7.0m bellow ground level. All identified deposits beneath the imported hardcore were tidal and/or fluvial in origin associated with the river mouth.



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