PROJECT

Underwater Archaeological Impact Assessment, UTAS Cork (Whitegate-Aghada).

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Underwater & Land Based Archaeological Services

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Acknowledgments

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The archaeological team consisted of Julianna ODonoghue and Caitlyn Haskins

Abstract

This report relates the results of an Underwater Archaeological Impact Assessment (UAIA) for the site of a proposed pipe component of the Carlislefort, Glanacow and Trabolgan, Co. Cork Sewerage Scheme at White Bay beach, Cork Harbour. A dive/wade survey (18D0104) and metal detection (18R0160) were carried out by *Mizen Archaeology Ltd.* on behalf of *Irish Water* in May 2019. The surrounding area has evidence of human activity from the prehistoric period through to the modern day with a concentration of activity at the Dog's Nose headland, immediately north of White Bay beach, which saw the development of several fortifications over time. However, the wade, dive, and metal detection surveys found nothing of archaeological significance within the survey area.

1. Introduction

This report relates the results of an Underwater Archaeological Impact Assessment (UAIA) for the site of a proposed pipe component of the Carlislefort, Glanacow and Trabolgan, Co. Cork Sewerage Scheme at White Bay beach, Cork Harbour, in the civil parishes of Corkbeg and Trabolgan. A dive/wade survey and metal detection were carried out by *Mizen Archaeology Ltd.* on behalf of *Irish Water* in May 2019 under licence numbers 18D0104 and 18R0160.

Irish Water engaged the services of *Mizen Archaeology Ltd* to survey the area at White Bay where they propose to construct a 1-meter wide outfall pipe that extends 200 meters from the shore. The survey area is 250x200m which has been allocated to allow for a buffer zone in case of slight changes in the plans by the client (Fig. 1).

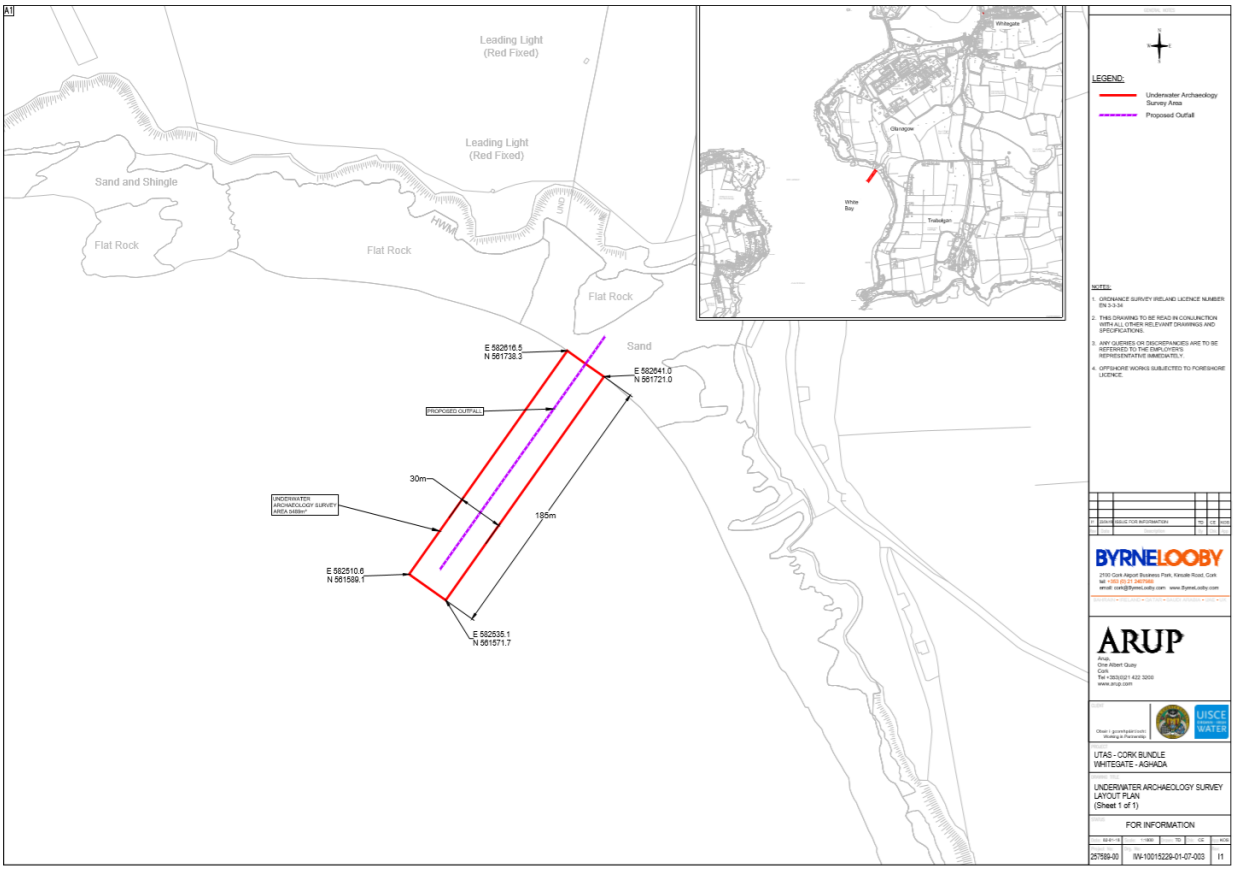

Figure 1 Underwater archaeology survey area (courtesy of Irish Water).

1.1 Conventions, Legislation and Guidelines

The Archaeological Impact Assessment was undertaken with due regard to the following national and international protective conventions, guidelines and legislation:

• National Monument Act, 1930, amended 1954, 1987, 1994 and 2004

• Heritage Act, 1995

• National Cultural Institutions Act, 1997

• The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous) Provisions Act, 1999

• Framework and Principles for the Protection of the Archaeological Heritage, 1999, Department of Arts, Heritage, Gaeltacht and the Islands

• Local Government (Planning and Development) Act, 2000

• European Convention on the Protection of the Archaeological Heritage (the 'Valletta Convention') ratified by Ireland in 1997

• Council of Europe Convention on the Protection of the Architectural Heritage of Europe (the 'Granada Convention') ratified by Ireland in 1997

• International Council on Monuments and Sites (ICOMOS), advisory body to UNESCO concerning protection of sites and recommendation of World Heritage sites ratified by Ireland in 1992

2. Scope of Assessment

The aim of this assessment was: (1) to determine the impact of the outfall regarding previously unknown and potential archaeological remains; (2) to record and recommend mitigation for any underwater archaeological remains recorded within the works area.

2.1 Desktop study

- The Record of Monuments and Places (RMP) compiled by the Archaeological Survey of Ireland comprises lists, classifications of monuments and maps of all recorded monuments with known locations and zones of archaeological significance. The monument records are accessible online from the National Monuments Section (NMS) of the Department of Arts, Heritage and Gaeltacht (DAHG) at www.archaeology.ie. These were used to establish the wider archaeological context of the site.
- The Excavations Bulletin online database (www.excavations.ie) which contains summaries of all archaeological excavations in Ireland, was consulted to review archaeological investigations done previously in the area.

- The Shipwreck Inventory of Ireland: is principally a desktop survey of information gathered from a broad range of cartographic, archaeological and historical sources, both documentary and pictorial pertaining of shipwrecks around Irish shores of which a conservative estimate is at least 10,000. The files of the unpublished Inventory of Shipwrecks are located in the Underwater Archaeology Unit (UAU) of the NMS in Dublin and records dozens of wrecks for the Whitegate area.
- The Record of Piers and Harbours: is a draft unpublished document compiled by the NMS. It draws on various historical sources dealing with historical piers and harbour development in Ireland.
- Cartography: several historic maps and charts were examined (see bibliography below for a full list).
- Aerial photography: a variety of low and high-altitude aerial photography (vertical and oblique) was examined. Infra-red aerial photos undertaken by the Marine Institute were also examined as well as the aerial orthophotos from the National Monuments website, www.archaeology (see references below for full list).
- Documentary sources: several sources were examined. For a full list of all sources examined see bibliography below.

2.2 Foreshore Survey

The site was inspected in May 2019. A visual inspection (wade) survey in tandem with a handheld metal detection survey was undertaken within the proposed outfall area. An Excalibur 800 metal detector was used to metal detect the foreshore area and the position of anomalies were recorded. Any features of potential archaeological significance were recorded including a description, photographic record and GPS position.

2.3 Dive Survey

A four-person dive team, consisting of Julianna O'Donoghue and three support persons all of whom possess HSE/HSA parts III & IV commercial diving licenses carried out the underwater archaeological assessment during May 2019. All of the divers possess H.S.A. parts III and IV diving licenses and H.S.A Medical Certificates. Diving operations complied with SI No 254 of 2018 Safety, Health and Welfare at Work (Diving) Regulations 2018.

3. Receiving Environment

3.1 Location

The proposed outfall pipe shall be located within White Bay beach, south of Whitegate village, on a small rocky inlet.

White Bay beach is within the townlands of Glanagow and Trabolgan, bordered closely to the north by Carlislefort. It straddles the boundary of the civil parishes of Corkbeg and Trabolgan. Opposite from the White Bay beach is Ram's Head Cape now known as Camden Fort Meagher, in the townland of Crosshavenhill. The beach itself is bordered by Canavan Point to the south, with Roche's Point further south leading to open water.

Figure 2 Location of Whitegate village and the proposed outfall area.

3.2 Geology and Topography

Cork Harbour was shaped by sedimentary rocks deposited some 350-400 million years ago during the Devonian Period and by marine sediments which encroached on the Munster Basin during the subsequent Carboniferous Period. The topography of Cork Harbour was transformed again as a result of the uplift; folding and faulting of the Devonian and Carboniferous rocks during the Hercynian Orogeny some 250ma

years ago. Post glacial times saw the drowning of the valleys to produce the harbour as it is now (Sleeman 1991, p.5).

The shore is on a bedrock of Old Red Sandstone with the main soil type being brown podzolics. Offshore, the bedrock material is Devonian sandstone and conglomerate.

4. Results

4.1 Desktop Assessment

The area surrounding White Bay beach has evidence of human activity from the prehistoric period through to the modern day. Activity was especially concentrated on the Dog's Nose headland, immediately north of White Bay beach, which saw the development of several forts over time; the townland gained the name of the most prominent of them- Carlislefort. South of White Bay beach is Roche's Point, which is the site of both a tower and a lighthouse. In the early 19th century, there were coastguard stations at both Whitegate and at the mouth of the harbour at Roche's Point (McCarthy, 2019).

4.1.1 Recorded sites, monuments, and architectural heritage

There are no sites or monuments recorded in Glanagow townland, however, there are two ringforts (CO100-033 & CO100-032) within 500m of the survey area in the townland of Carlislefort.

There are 5 other recorded sites within 1km of the survey area. Two of these- a fortification (CO087-058) and burial ground (CO088-004) in Carlislefort- are associated with the military activity at Fort Carlisle. The others- a fulacht fia (CO088-124) and corn-drying kiln (CO088-125) in Corkbeg, and a ringfort (CO088-031) in Ballytigeen- are indicative of an earlier phase of occupation. Another 16 sites are recorded further away in Trabolgan, Ballytigeen, and Corkbeg, which are listed in Appendix 2.

Numerous architectural heritage sites, listed in the National Inventory of Architectural Heritage (NIAH), are recorded in association with Fort Carlisle; the closest being *c.* 500m from the survey area. The oldest identified part of the fortification dates from *c.*1800 (Reg. No: 20908790). Part of the wall structure from *c.* 1870 is still visible (Reg. No: 20908778). Within the fortifications, a number of barrack structures from 1810 are standing (Reg No: 20908791, 20908792, 20908793, 20908794). More barracks (Reg No: 20908795) were added in 1950 next to the older ones. A small church from 1950 (Reg. No: 20908797) is also located south of the fortification.

Another handful of architectural heritage sites are recorded in Trabolgan, with a grouping around the lighthouse at Roche's Point. The architectural heritage sites are listed in Appendix 3.

4.1.2 Excavations Bulletin

Test trenches were dug in 2008 in Whitegate as part of the planned installation of a gas pipeline between Midleton and Whitegate, but no areas of archaeological potential were identified. However, test trenching and monitoring in 2007 revealed two fulachta fiadh and a kiln in Corbeg, Whitegate. These were subsequently fully excavated.

In 2011, monitoring works of landfall sites at Glanagow and Raffeen identified one item of archaeological potential: an isolated oak timber. However, the exact nature of the timber is unclear, though the dimensions indicate that it may have been part of the upper elements of a vessel, possibly undergoing reuse at a later date. The timber was recorded and the redeposited on the seabed outside of the cable-embedding works.

Archaeological investigations from a broader area can be seen in Appendix 1.

4.1.3 Shipwreck Inventory

There are over 200 known wrecking events recorded the unpublished Shipwreck Inventory for Cork Harbour (see Appendix 4). Of those wrecking events, 16 are recorded in the vicinity of the survey area- either in White Bay or close to Carlisle Fort. Another 60 wrecking events are recorded in Cork Harbour in general and, therefore, could have occurred in or near the survey area. These all occurred between 1749 and 1957, with a majority of these wrecking events happening in the 19th and 20th centuries. All shipwrecks whose wrecking event dates are at least a hundred years old are designated as monuments under the National Monuments (Amendment) Act, 1994.

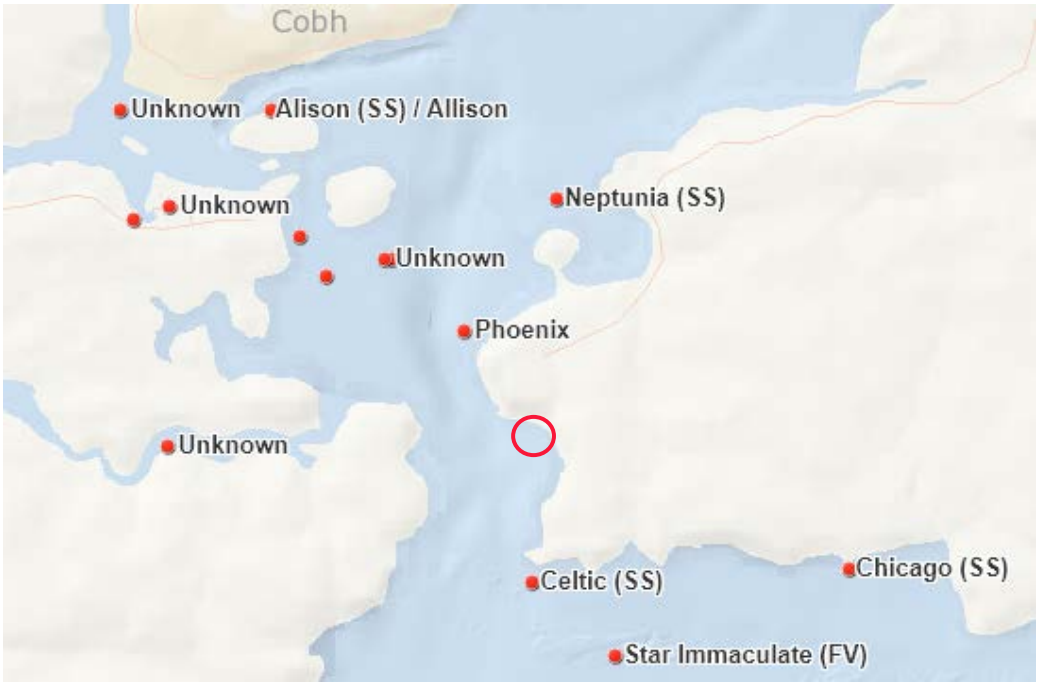

Figure 3 Excerpt from National Monuments Services Wreck Viewer application showing the known wreck sites in the Whitegate vicinity.

4.1.4 Cartography

Sir Thomas Smith's *An Ancient Map of Ireland* (1572) labels 'Corkboge' with a possible tower or fort, which corresponds with the construction of King John's Fort. Corkbeg Fort is shown again in various maps including the 1616-1620 *Map of the barony of Imokilly in the County of Cork* and the 1655 Survey Down Survey. The later shows both 'Corkbegg Forte' and second 'Forte' with round towers in the same area. Notably, none of these maps show any sort of fortification or beacon at Roche's Point. On Phillips' 1685 map, the fort is shown with its shoreline battery but also, a short distance to the south, 'a castle with earthen outworks, having one bastion-shaped projection towards the east' (Gowen 1979, 231–2).

By 1776, a tower is shown at Roche's Point in the maritime survey by MacKenzie. The same survey denotes a fort on a hillside labelled Dog's Nose, which corresponds to the location of the later Carlisle Fort and the earlier Corkbeg Fort.

By 1823, the area is simply marked 'Fort' in Lucas' *Ireland*. The 1st edition OSI map, *c.* 1841, gives a more detailed view of the area. A significant fortification is shown at Carlisle Fort. Rupert's Tower, south of the main fortifications, is shown to be *c.* 600m NE of the survey area. Immediately inland of the survey area, there are several small buildings. Four line the road north, while seven line the road south before it comes to a fork. The 2nd edition OSI map holds no information about Carlisle Fort, with that entire section of the coast missing from the map. Even the area immediately south of the Fort is

notably left blank of any detail. There are no longer any buildings shown on the road north towards Glanagow, and only two before the fork along the road to the south.

The 1st edition of the Ordnance Survey (1845) shows a Coast Guard Station located along the coast, just south of Canavan Point. By the second edition in 1897 it has been converted into a meteorological station, boat house and slip.

Figure 4 Portion of Sir Thomas Smith's An Ancient Map of Ireland, 1572, showing a fortification at 'Corkboge'.

Figure 5 Portion of the Map of the Barony of Imokilly in the County of Cork, 1616-1620, showing fortifications at Dog's Nose and at Trabolgan.

Figure 6 Thomas Philips' map of Cork Harbour (National Library of Ireland).

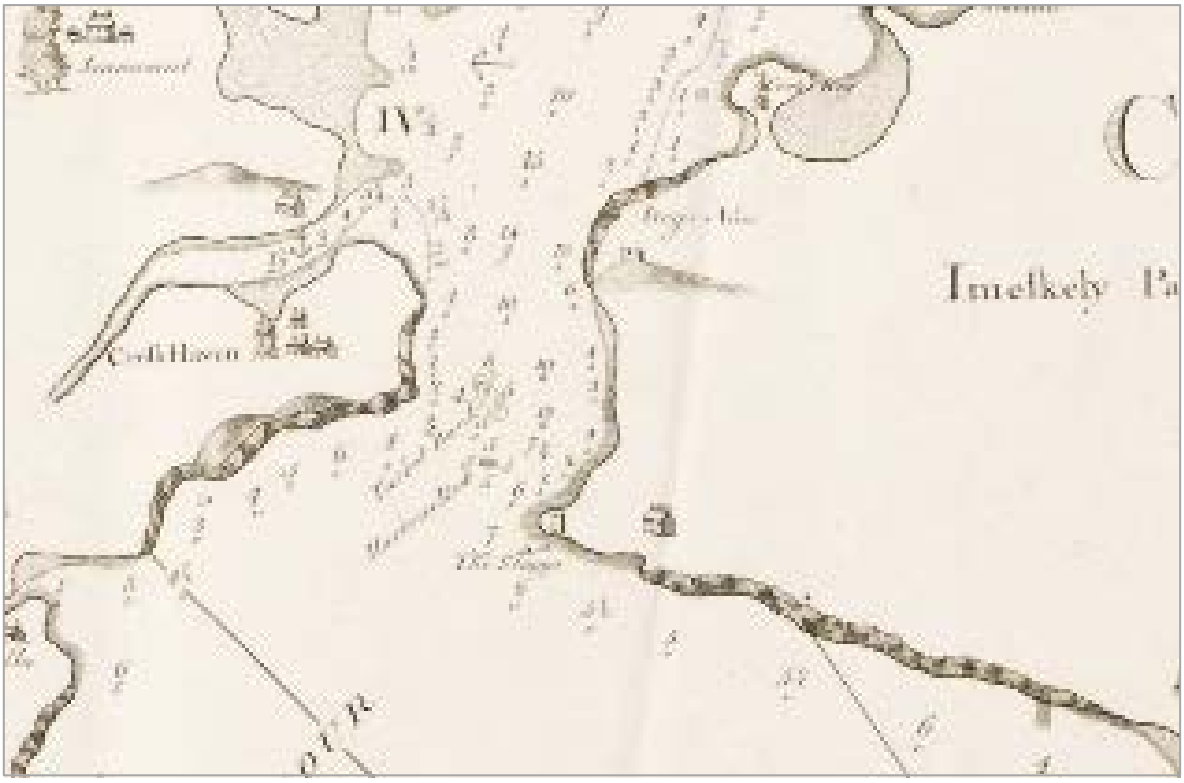

Figure 7 A portion of M. MacKenzie's A Maritim Survey, 1776, showing a tower on a hill at Dog's Nose and a tower at Roche's Point.

4.1.5 Historical and Archaeological Background

Prehistoric

There has not been any evidence of the Mesolithic found within the survey area, however Mesolithic stone tools and debitage were found at Ballintra West, *c.* 4.2km south-east of the survey area (Cleary, 2015).

A later prehistoric lithic scatter (CO100-001---) was found during field walking in Trabolgan, located to the south of White Beach.

The Bronze Age is represented by two *fulachta fiadh* (CO088-123 and CO088-124) and a corresponding corn-drying kiln (CO088-125), which were discovered during the construction of the Whitegate Oil Refinery located to the northeast of White Beach.

There are a several sites which have no definitive dates, including ringforts (CO099-031, CO100-003, CO100-005, CO100-006, CO100-032, CO100-033), enclosures (CO088-115, CO088-034), middens (CO088-105, CO088-106, CO088-126), promontory forts (CO100-061, and other earthworks (CO100-101, CO100-002, CO100-004, CO100-045).

Figure 8: Excerpt from National Monuments Services map showing the distribution of recorded monuments and protected architecture in the Whitegate vicinity. Proposed outfall site highlighted with a red circle.

Fort Carlisle

Fort Carlisle (CO087-058) is a bastioned fort located on the east side of Cork Harbour. It stands opposite to Camden Fort Meagher, with which it was meant to work in tandem to defend the harbour. Several forts had been built on the location previously, going variously by Dog's Nose (a reference to the headland itself), Corkbeg, King John's Fort, and Prince Rupert's Tower. The hilly location was strategic in order to control access to the inner harbour (McCarthy, 2019).

Fortification began at this location began sometime after *c.* 1552 (Gowen 1979, 232). The first detail of the fort comes from a plan by Robert Lythe *c.* 1571, which outlined a detached bulwark on the coast, with an unfinished bastioned structure a short distance landward. Francis Candell's map of 1587 showed the latter structure as a King's Work, and dated its origin at latest to 1553, when Edward VI was succeeded by Queen Mary. The fort was seemingly out of use by 1576, although a survey of the most important Irish coastal defences by Captain Nicholas Pynnar in 1624 showed that the fortification was still in place, having gained the misnomer of King John's Fort (Hartnett McEnery, 2006, pp. 7-8).

Prince Rupert's Tower (CO100-048), which was built just south of the ruins of King John's fort, has a similarly misleading name. Lord Townshend's 1770 military despatch attributes 'the old work's at Dog's Nose and Ramshead' (later to be the location of Camden Fort) to Prince Rupert, while at the same time dating their construction to 1644, which was five years before the Prince's arrival (*ibid.,* 18). It is more likely that Dog's Nose headland was refortified, possibly by the Roches, several years before Prince Rupert's arrival (McCarthy, 2019). A return made of the Commonwealth in April 1659 listed the fort at Dog's Nose as Corkbeg. Once again, the fort was allowed to fall into disrepair and was ultimately given up by 1665 (Hartnett McEnery, 2006, p. 22). By the time Smith was writing in 1774, it had been, "suffered to go to ruin" (p.142). Of Rupert's Tower, which he called a lesser fortification, Smith writes that it was made use of, "in the reign of the late king James…to annoy the landing of the earl of Marlborough," and that, "this battery was soon taken by the seamen"(Smith 1774*,* 142). The same cycle of fortification, disrepair/abandonment, and re-fortification repeated itself several times over the fort's history.

Work on the fortification known as Fort Carlisle began in 1779. It was so named in honour of the Earl of Carlisle, the incumbent Lord Lieutenant. The updated fortifications included an entrenchment at the southern end which ran roughly southward along the line of the cliff to 'Prince Rupert's Redoubt and Castle', the latter of the two being a square-bastioned tower (Harnett McEnery 2006, 39-40). By 1796, when hasty preparations were being made to prepare for the French invasion, the entrenchment leading to the 'Castle' had been levelled, and there was no longer any redoubt around the square tower. Fort Carlisle, along with Fort Camden, was given up in 1797, although it was quickly repossessed and repaired upon the outbreak of war (*ibid.,* 42).

Updates to Fort Carlisle in 1811 included the addition of a two-gun rectangular tower to the south of the fort. In order not to obscure this new tower's field of fire, Prince Rupert's tower, which had been slightly to the north of the new tower, was demolished. The new tower also took on the mantle of Prince Rupert's Tower (*ibid.,* 90)

In early 1850, alterations were made to Fort Carlisle and Fort Camden to accommodate convicts, who would repair and complete works there (*ibid.,* 119). These were known as intermediate prisons, where a small number of the best-behaved prisoners were located (Gibson 1861, 424). A report on the works of 1866 noted that the fortifications were of obsolete construction and were being remodelled in both their landward and seaward defences. One of the new batteries carried on the name of Prince Rupert, being placed on the site of the tower erected in 1811, which was demolished in the remodelling (Hartnett McEnery, 2006, p. 126)

By 1886, a minefield had been laid between Carlisle and Camden, with submarine mines supplied by the Royal Engineers (*ibid.,* 127). These defences had been further strengthened by 1899, by the installation of the Brennan torpedo (*ibid.*, 153).

Fort Carlisle was renamed Fort Davis when it was returned to the Irish government along with the other Treaty Ports in 1938 (McCarthy, 2019). It is now owned by the Department of Defence and is used as an army training camp (*National Inventory of Architectural Heritage).* In October 2015, the Irish Defence Forces uncovered a 100m-long underground tunnel, which was part of a network beneath the fort. Old ruins, pillboxes, and the remains of torpedo bays in the hewn-out rock at the bottom the three-level structure have also been discovered (McCarthy, 2019).

Roche's Point

The Trabolgan townland, which covers the land along the southern half of White Bay down to Roche's Point, was originally owned by the Fitzgerald family in 1174 AD. The land was purchased by the Roche family sometime between 1640 and 1650 and established as an estate. Many structures from this estate are still standing, such as 'Roche's Tower' (Reg. No: 20910002) built as a banquet hall. A late 18th century house (CO100-040), a chimney from c.1840 (Reg. No: 20910003), and the estate gate from 1870 (Reg. No: 20910004).

In 1693, some money was spent on fortifying Cork Harbour, presumably following the suggestions Lord Talbot had made in a report on Irish Coastal defences in 1691. When Vallancey mentions the neglect to Roche's tower, among others, in his military survey of 1777-1779, it can be reasonably assumed that these neglected fortifications were fortified or refortified in 1693, as little work was put into coastal defence after 1698. In fact, the tower was abandoned altogether by the early 1700s. Roche's Tower was included in Vallancey's plan of 1781. It was labelled as having been built in 1779, and shows the old tower, in use as a magazine, surrounded by a rampart (Hartnett McEnery, 2006, p. 39). Five of the Carlisle guns would have been deployed at Roche's Tower from early 1804.

In about 1790 a folly tower was built by Edward Roche Esq. of Trabolgan as a banquet room and pleasure house, but the owner would have had little chance to enjoy it. Roche rented the Tower to the Government for a period of about 100 guineas per annum in the late 18th century, seemingly shortly after its construction (Commissioners of Irish Lights). By 1814, Roche was released after being held as a prisoner of war in Naples, only to be immediately approached about the sale of the Tower and the surrounding land for the construction of a lighthouse (O'Reilly, 2018, p. 68). After difficult negotiations, the land was purchased for the lighthouse.

It was decided that the lighthouse would be built further out on the point than the Tower and, as such, Roche's Tower was left standing. The light was established by June 1817, however it was found to be too small for a major port, which led to it being dismantled and replaced in 1835 (*ibid.*). The second lighthouse remains standing today (Reg. No: 20910010). Lighthouse keeper houses from 1870 (Reg. No: 20910008 and 20910009) and 1910 (Reg. No: 20910007) are also still standing. Signal towers from 1870 (Reg. No: 20910005) are further inland.

Whitegate Oil Refinery

In the 1950s, the ESB Marina Power station started using oil, which significantly increased Ireland's expenditure on imported petroleum. In order to offset the cost, the government accept a proposal to erect and operate a new oil refinery at Corkbeg Island, Whitegate. The refinery was officially opened on the 22nd September 1959 (McCarthy 2019).

A series of workers houses (Reg. No: 20908773) were built in 1945-1955 for the construction of the oil refinery. These are currently not occupied.

Whitegate is Ireland's only crude oil refinery and has played a critical role in the country's energy infrastructure ever since it opened. It supplies about 40 per cent of Ireland's transport and heating fuel (*ibid.*).

4.1.6 Townlands and Place names

Townlands were the smallest units of land established in the Irish administrative system in the first half of the 19th century, though most were in existence before that as part of a much earlier 'Tuath' or tribal boundary set up (www.logainm.ie). This explains their origin names in Irish, many of which are based on the early tribes in a particular area or on actions/events that took places within a given location.

The survey area falls on the border between the civil parishes of Corkbeg- Corcaigh Bheag or 'small Cork'- and Trabologan- Trá Bholgan or 'Bolgan's strand'. It is within the townland of Glanagow, which translates to Gleann an Ghabha, meaning the smith's glen. To the north, the townland of Carlislefort borrows its name from the older name of Fort Davis. To the south Roche's Point has a near-direct translation to Rinn an Róistigh.

4.2 Site Inspection

The diving inspection was carried out in May 2019 under exceptionally good diving conditions. In order to ensure 100% coverage of the site, weighted lines were laid on the seabed at 5m intervals and the dive survey was be conducted along 2.5m transects. Water depth was recorded between 0 and 8m. Visibility was excellent – up to 10m. The seabed comprised medium grained sand and was flat and featureless. Metal detection targets were very sparse, and all were identified as modern debris. A single eroded sherd of 19th/20th century ceramic was recovered.

Similarly, the inter-tidal survey, carried out on a sandy foreshore produced nothing of archaeological significance.

4.2.1 Boreholes

Ground Investigations Ireland Ltd carried out a site investigation on the instructions of *Arup*, on behalf of *Irish Water* between February and August 2019 along the route of the proposed sewerage scheme. Their site investigation works included three rotary cored boreholes taken from White Bay in the line of the outfall.

Review of the borehole results (Appendix 5) showed nothing of archaeological significance within the dive survey area. However, borehole TCBH601, which was located over 100m SW past the dive survey limit, returned evidence of made ground, which included fragments of timber from 1m to 3.1m below seabed level and timber from 3.1m to 4.2m below seabed level.

Plate 1 View of dive/wade survey at White Bay Beach, Cork Harbour.

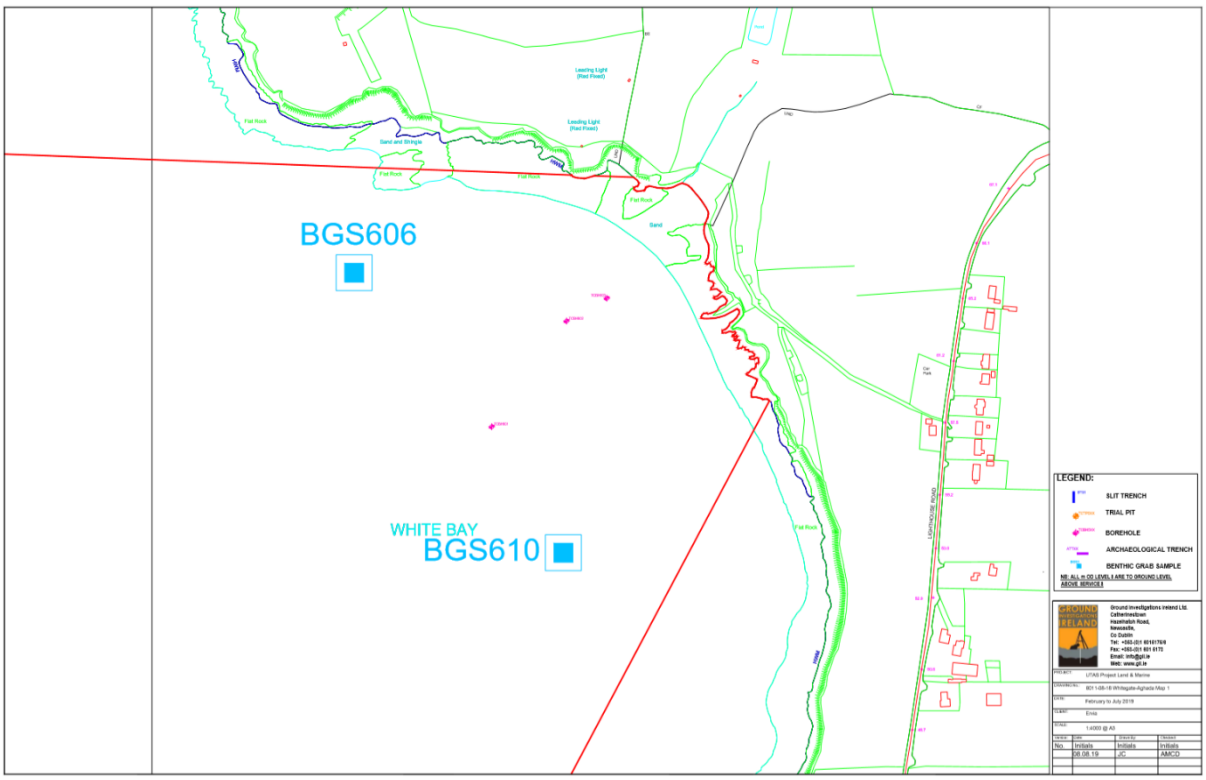

Figure 9 Drawing showing three borehole locations in White Bay (courtesy of Ground Investigations Ireland Ltd).

5. Impacts

No archaeological sites or features were recorded during the underwater assessment. However, the absence of definitive archaeological features on the seabed surface does not necessarily reflect the potential buried archaeological content within the sediment.

Review of the borehole results returned only one indicator of possible archaeological material, which came from TCBH601, located outside the limits of the dive survey and buried to a depth of at least 3.10m. This is located beyond the proposed end of the outfall.

The likelihood of the proposed works impacting on unknown potential archaeology is considered moderate.

6. Mitigation

All ground disturbance associated with the outfall construction should be archaeologically monitored under archaeological license issued from the National Monuments Service.

It is suggested that sub-bottom profiling be undertaken prior to any ground disturbance work in the region of borehole TCBH601. This would help determine the source of the timber identified in the borehole results.

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7.2 Maps

1572 Sir Thomas Smith, *An Ancient Map of Ireland*

1616-1620 *Map of the barony of Imokilly in the County of Cork*

1655, *Down Survey of Corkbeg Parish*

1776 Murdoch MacKenzie *A Maritime* (sic.) *Survey of Ireland and the West of Great Britain taken by Order of the Right Honourable Lords Commissioners of Admirality in two volumes: The South coast of Ireland from Cable Island to Gally Head*

1823 Lucas Field Jr. *Ireland*

1865 Thomas Philips, *Map of Cork Harbour*

1884 John Bartholomew, *Philip's Handy Atlas of the Counties of Ireland*

7.3 Other Sources

Database of Archaeological Excavations www.excavations.ie

National Monuments Service online database www.archaeology.ie

Ordnance Survey of Ireland online historic mapping www.osi.ie

National Inventory of Architectural Heritage, www.buildingsofireland.ie

National Library of Ireland, www.nli.ie

The Placenames Database of Ireland, www.logainm.ie

8. Appendices

Appendix 1- Previous Archaeological Work

2008:182- Carlislefort/Castlemary/Crocane/Kilgrellane, Co. Cork

Sites and Monuments Record No.: N/A

Licence No.: 08E0076

Description: Monitoring of topsoil-stripping along the East Cork Gas Pipeline was undertaken on behalf of Bord Gáis Éireann between March and April 2008. A number of sites consisting of isolated archaeological features were uncovered. With the exception of Carlislefort 1, which was preserved in situ, all other sites were excavated under the monitoring licence. These sites included Carlislefort 1, Carlislefort 2, Castlemary 3, Castlemary 4, Crocane 2 and Kilgrellane 1. Excavation of these sites was carried out by Terry Connell, Emma O'Reilly and Niall McCarthy in advance of gas pipe installation. Radiocarbon analysis of the various sites revealed that they dated from the Iron Age to the medieval period.

2007:322- Corkbeg, Whitegate, Co. Cork

Sites and Monuments Record No.: N/A

Licence: 07E0777

Description: Two adjacent fulachta fiadh were uncovered during test-trenching and monitoring investigations in a marshy low-lying corner of a greenfield in the south-west quadrant of the Whitegate Oil Refinery facility. This area was due to be impacted on by construction works and, following consultation with the National Monuments Service, it was agreed that both fulachta fiadh should be fully excavated.

The southern fulacht fiadh had been distributed by later agricultural activity, including field drains and a drying kiln. The burnt spread extended over an area measuring 12.5m east-west by 10m and ranged between 0.02m deep at the outer edges and 0.3m deep near the centre. It was composed of a charcoal-enriched sandy clay deposit with frequent inclusions of heat-shattered stones. Following removal of the burnt spread, a rectangular trough cut with rounded corners was exposed in the low-lying north end of the site. The north end of the trough had been removed by a field drain and its surviving extent measured 2.65m north-south by 1.05m and 0.26m deep. There were no surviving traces of a lining element present. The trough was cut into an outcrop of loose shale-rich bedrock and was filled with the overlying burnt spread. It began to fill with ground-water following the removal of the fill material. A small hearth was uncovered underneath the south-west quadrant of the burnt spread. This was composed of a charcoal-rich deposit, which measured 1.07m east-west by 0.97m and 0.08m in maximum depth, and it contained a number of partially burnt, medium-sized angular stones. A stone-lined pit truncated the south-west edge of the burnt spread and measured 1.2m north-south by 1.7m and 0.3m in depth. The base was sealed by a number of flat slates, which were overlain by eight upright stones that lined the sides of the pit. The exposed surfaces of a number of the sidestones and basal slates displayed traces of burning. It appeared that the hearth and pit were used to heat the stones before they were placed into the trough.

The south-east quadrant of the burnt spread was truncated by a shallow L-shaped cut feature, which was interpreted as the remains of a drying kiln. The cut measured 0.18m in depth and ranged between 1.3m and 1.6m in width. It extended east-west for a distance of 3.8m and then turned to the north and continued for 4.5m until it terminated in the north-east quadrant of the burnt spread. The kiln cut extended down into the subsoil layer in all areas apart from the northern terminal, where the burnt spread formed the base. The sides of the cut were lined with 2-3 rough courses of angular field stones and these formed an internal flue averaging 0.6m in width. An upright baffle stone was set across the centre of the flue and it appeared that the bowl area was removed by later agricultural activity. The interior of the kiln was backfilled with sterile fill of redeposited subsoil and the only artefact recovered was a saddle-quern fragment.

The truncated remains of a second fulacht fiadh were uncovered 16m to the north-west. The site was located in level ground at the base of the ridge in a marshy area of marginal ground that was prone to waterlogging. The burnt spread was uncovered following topsoil removal and measured 5.3m east-west by 7.2m and between 0.02m and 0.1m in depth. It contained occasional small charcoal flecks and was composed of a mixture of burnt material intermixed with topsoil, which indicated cultivation disturbance. The north endo f the burnt spread both se4aled and filled a rectangular pit, which measured 2.4m north-south by 1.4m and 0.3m in depth. There were no traces of lining in the pit and the east and west sides were truncated by a 0.3m-wide trench that contained a ceramic drainage pipe. Two subcircular pits were uncovered in the subsoil to the west of the burnt spread and both were sealed by the topsoil layer. The northern pit was stone-lined and contained some partially burnt medium-sized stones. The southern pit was unlined and the fill was similar in compositing to the burnt spread material.

There were no other archaeological features uncovered in the remainder of the development area.

2008:155 – Ardnabourkey 1, Cork

Sites and Monuments Record No.: N/A

Licence: 08E0350

Description: Works were carried out along the route of the East Cork Gas Pipeline on behalf of Bord Gáis Éireann. Monitoring of the topsoil-stripping along the pipeline route between March and April 2008 revealed a spread of burnt-mound material at Ardnabourkey 1, Co. Cork. This spread was subsequently resolved in May 2008. Radiocarbon analysis of the burnt-mound spread revealed that it dated to the Middle Bronze Age.

2011:103 – Glanagow to Raffeen, Cork

Sites and Monuments Record No.: N/A

Licence: 11E0038, 11D0013

Description: Monitoring took place of all foreshore, intertidal and underwater disturbances associated with preparatory works and the installation process for the Glanagow to Reaffeen Subsea 220kV Cable Project. Three wo4rks components required monitoring: foreshore trenching, pre-lay grapnel run (PLGR) and cable-embedding operations.

Monitoring of the excavation of four cable trenches was undertaken at the two landfall sites, located at Glanagow (Whitegate) and Raffeen (Ringaskiddy). The cable trenches were excavated using a long-reach tracked-machine excavator and extended from the low-water mark to the upper foreshore at the transition joint locations. Each cable trench measured 1m in width by 1.25m in depth. The work was undertaken at low water and each trench was cut in three stages, allowing the seaward point of each trench to be dug first, followed by the middle and upper foreshore locations. The monitoring process did not reveal any material, deposits or structures of archaeological significance: the upper levels of each trench comprised redeposited beach material or a sterile silty sand; the lower reaches were composed of a silty clay deposit that was archaeologically sterile.

Monitoring of the PLGR was carried out on completion of the foreshore trenching. The PLGR was undertaken to identify and remove any potential obstacles prior to commencement of the cable-laying and embedding operation. The PLGR was undertaken using the Port of Cork Authority's multi-cat vessel the Dennis Murphy. A range of modern debris was recovered that included tractor tyres and a series of iron/steel cable lengths. No material of archaeological significance was encountered as part of the PLGR.

A programme of monitoring for all seabed disturbances associated with the cable-embedding operation was devised. A self-propelled multi-purpose barge, the Victor, was used as a dive platform for the on-site cable installation contractors, JD Contractor A/S. The cable-embedding process employed a self-propelled (water-powered) sled carrying a series of jetting heads that were used to cut each of the seabed trenches to a depth of 2m+ within the navigation channel and 1.5m+ outside the channel. The sled was positioned and monitored by a commercial diver on the seabed, the diver being present to ensure correct burial depth and facilitate removal of any seabed obstacles encountered during the sled's operation.

Monitoring of the embedding process was implemented through systematic monitoring of the diver's hat-mounted HD video feed and continual logging of sled position and kilometre position (KP) along the cable. In the event of an obstacle being encountered, the archaeologist would inspect the object via the video feed and, where deemed necessary, have the object brought on board for closer inspection, recording and assessment.

Despite the considerable archaeological potential ascribed to the seabed within Cork Harbour, only one object of archaeological potential was recovered as part of the cable-embedding operation: an isolated oak encountered at KP 2.780 on Cable 4, NGR 181022 62827. The exact nature of the timber is unclear, and its dimensions do not indicate that it formed part of the framing or planking timber associated with a timber vessel. It may, however have formed part of the upper elements of a vessel, decking timber, etc. It this was the case, the timber has also undergone reuse at a later date. It is likely to date from the 19th or early 20th century. It was fully recorded and then redeposited on the seabed outside of the cable-embedding works at NGR 180776 63893.

2008:150- Aghada Power Station, Adhada, Cork

Sites and Monuments Record No.: N/A

Licence: 08E0047, 08D006, 08R012

Description: Monitoring of the excavation of a marine pipeline trench and intake apron was undertaken adjacent to Aghada Power Generation Plant, Aghada, Co. Cork. These in-water construction are part of the extension/upgrading works to the power plant facility and include the

provision of an outfall pipeline to discharge cooling-water from the plant turbine and dredging an intake apron to provide coolant to the turbine. The outfall pipeline extends c. 450m from the existing shoreline (north-west/south-east orientation) and a pipe-trench was dredged to accommodate to a 2m-diameter outfall pipe. The dredged footprint for the trench was 39m in width, with maximum slopes graded at a ratio of 1:6 (dependent on material encountered), dropping to a base width of 3m. The trench was backfilled with dredged material. The outfall pipe terminates at a rising diffuser head, above which a maintenance platform has been constructed to allow maintenance access to the diffuser. A 31m (east-west) by 34m area of seabed was dredged to a depth of 3m to accommodate the intake pipe. The dredging process was undertaken by backhoe dredger, using differential GPS, to allow accurate excavation of material at both locations.

A pre-construction assessment of the pipeline route and intake location was undertaken by ADCO Ltd. in June 2004 (Excavations 2004, No. 184, 04D011, 04R038). No archaeologically significant material, structures, or deposits were encountered as part of this assessment.

Monitoring of pipeline dredging was undertaken on a 14-hour basis on 1-7 February 2008, changing to a 24-hour programme on 8-14 February. The intake apron was dredged on 24 March and 2-3 April 2008. It was monitored on as 12-hour basis.

The removal of all seabed material was monitored. Seabed deposits were largely sterile and very little man-made material was observed as part of the monitoring process. The seabed was primarily composed of a grey silty clay deposit with frequent angular gravel and oyster shell inclusions. Across the south-eastern extent of the dredging works the seabed composition changed to a deposit composed of angular gravel and rock fragments, material believed to be overspill from land reclamation that has taken place at Aghada Power Plant. Only one archaeologically significant object, a large iron cannon ball, was encountered during the monitoring programme. The cannon ball is believed to be an isolated find and, due to its size, is thought to be associated with land-based artillery artillery rather than shipboard cannon.

2004:0184 – Aghada Power Station, Aghada, Cork

Sites and Monuments Record No.: N/A

Licence: 04D0110, 04R038

Description: Visual inspection and magnetometer survey by handheld metal detection was employed to assess the archaeological potential of the seabed surrounding two impact areas associated with the proposed construction of a discharge pipeline and pumping station at Aghada power station. Dive operations were run from a 'live boat' set up to maximise seabed coverage. The survey extended 15m either side of the pipeline route and 60m off the terminal end of the construction. Likewise, a suitable 'buffer zone' was included around the proposed pumping station. The foreshore area, an area of extensively reclaimed land, was also field-walked. No archaeologically significant features were identified for either area. The assessment was undertaken on 1 April 2004.

2000:0107 – Aghada Upper, Cork

Sites and Monuments Record No.: RMP 88:03501/02

Licence: 00E0605

Description: Pre-development archaeological testing was carried out at Upper Aghada in Cork Harbour. The housing site is within the zone of archaeological potential of two registered monuments, a disused Church of Ireland church and a graveyard. The church is located in the north-central area of the graveyard. It is rectangular in ground-plan, and all of the architectural features are of 18th-century appearance. The interior contains numerous 18th- and 20th-century headstones, the earliest dating from 1819. The church fell into disrepair in the early part of the 18th century when a new Presbyterian church was constructed on a different site, 300m to the north-west of the development. In order to ensure that associated archaeological features, such as graves or an earlier enclosure were not destroyed, Cork County Planning Authority required that a full archaeological assessment be made of the proposed site.

The residential development covered an area 60m x 80m and involved the construction of twelve dwelling-houses with associated roadways, parking area and septic tanks. The original plans indicated that the entrance to the development was located almost adjacent to the wall of the graveyard. In order to provide sight distance the developers were requested to relocate the entrance further to the west of the road frontage, away from the graveyard.

The archaeological assessment entailed the excavation of four trial-trenches. Three trenches were laid out on an east-west alignment across the greater area of the site, and another north-south adjacent to the graveyard. Test-trench 1 was placed at the eastern side of the proposed development, close to the wall of the graveyard. It was 30m long and was excavated to a maximum depth of 1.1m. The topsoil consisted of a mid-brown, sandy silt and contained small quantities of domestic debris including butchered animal bones, modern delft and broken bottles. No archaeological features were noted. Test-trench 2 was placed at the northern end of the site, close to the public road, and measured 10m x 1m. Trenching revealed an undisturbed soil profile, which was dug to a maximum depth of 0.9m. Test-trench 3 was located in the centre of the field along the east-west axis of the development. It measured 20m x 1.5m and was excavated to a maximum depth of 1.1m. Trenching revealed that there were no archaeological finds or deposits present. Test-trench 4 was placed at the southern end of the development. This was also excavated to a level below the natural boulder clay, and no features or finds of archaeological significance were noted.

1986:15 – 'Guileen', Ballintra West, Cork

Sites and Monuments Record No.: N/A

Licence: ---

Description: the presence of a prehistoric site at Guileen, Co. Cork, was first recognised during the examination of a ploughed field, when a large number of flint artefacts were collected from the surface. The field was subsequently walked on a number of occasions and a similar quantity of flint artefacts collected.

It is particularly significant that the artefacts from Guileen are exclusively flint, since there is no known abundant flint source in the immediate area. The most likely source in the nearby beach, which would have provided small pebbles of varying quality. It is possible, however, that the flint was brought in from elsewhere.

The flint artefacts were scattered throughout much of the field with two main concentrations of surface material. One of these concentrations produced a number of uni-plane cores (cores from which flakes were struck from one face only and which are found, most frequently, in later Mesolithic

contexts). These were associated with a collection of relatively large flakes and blades, which included two small 'Bann flakes' and a related 'Bar-from'. The second concentration produced uniformly smaller flakes, blades and cores.

While the uni-plane cores and the larger flakes and blades resemble later Mesolithic material, the smaller flakes and blades are not diagnostic of any particular lithic industry. So, although there was no doubt that the latter pieces were struck (indicating human activity), there were no definite indications as to which period they may have belonged.

Since the concentration of larger flakes and blades was relatively well defined, it was decided to excavate the area of the second concentration, that is, the area which produced the smaller flakes, blades and cores.

The primary intention of this small-scale excavation was to try to ascertain whether or not the original site, or part of that site, remained intact. It was hoped that it would be possible to define the limits of the lithic scatter and to determine the general dating of the material, either through diagnostic artefacts or through other forms of evidence.

Eight test-trenches were opened: four 2m x 2m trenches and four 1m x 1m trenches. These were situated so as to determine the extent of the lithic scatter and to assess the overall stratigraphy of the area.

The outer limits of the lithic scatter were identified by the relative scarcity of flint artefacts in certain trenches. In general, where the surface concentrations had occurred, there was a larger quantity of flint recovered during the excavation. These artefacts were also similar in type to the surface-collected artefacts, although they appear to be slightly less weathered. As with the material from the field surface, the artefacts from the excavation had no diagnostic characteristics and therefore are no further indications of dating of the material.

The majority of the flint artefacts came from disturbed 'plough-zones' and were accompanied by modern pottery and clay-pipe fragments, all clearly in disturbed contexts. Apart from modern plough-lines, there were no features or any evidence for an undisturbed 'occupation' level.

One example of a retouched artefact was recovered, which had steep retouch on one edge and is simply classed as a 'retouched flake'. Apart from a small number of blades, the rest of the assemblage consists of flakes and debitage (tiny pieces of flint, under c. 2cm long, which are not retouched).

Although the major concentration of the surface collection in this area was explored, there are a number of other areas which merit investigation, particularly the concentration of larger flakes and blades. It is hoped that it will be possible to return to the site at a later date.

The surface collection at Guileen was identified by Professor P.C. Woodman during the course of an extensive field study of the Cork region, funded by the Royal Irish Academy Archaeological Research Fund. Funding for the excavation was provided by the Wenncr Gren Association and the excavation ran from 28 September to 5 October 1986.

A summary report has been submitted to the Office of Public Works, but because of the inconclusive results of the excavation there are no plans to publish the report elsewhere.

Appendix 2- RMPs and SMRs

ID	CLASSIFICATION	TOWNLAND	LOCATION ITM
CO087-058	Fortification	Carlislefort	E572031, N562346
CO088-004	Burial ground	Carlislefort	E582518, N562726
CO088-030	Castle- unclassified	Corkbeg	E582688, N563904
CO088-031	Ringfort- rath.	Ballytigeen	E583159, N562356
CO088-032	Ritual site- holy well	Corkbeg	E583747, N562864
CO088-033001	Graveyard	Corkbeg	E583726, N563367
CO088-033002	Church	Corkbeg	E583745, N563389
CO088-033003	Graveyard	Corkbeg	E583772, N563397
CO088-101	Mound	Corkbeg	E583850, N563521
CO088-105	Midden	Corkbeg	E582637, N563842
CO088-106	Midden	Corkbeg	E582581, N563839
CO088-123	Fulacht fia	Corkbeg	E582818, N562672
CO088-124	Fulacht fia	Corkbeg	E582808, N562684
CO088-125	Kiln- corn drying	Corkbeg	E582818, N562672
CO088-126	Midden	Corkbeg	E582807, N563501
CO099-024	Fortification	Crosshaven Hill	E580934, N561845
CO100-001	Prehistoric site- lithic scatter	Trabolgan	E582999, N560349
CO100-002	Designed landscape- belvedere	Trabolgan	E583218, N56167
CO100-003	Ringfort- rath	Trabolgan	E583378, N560349
CO100-004	Earthwork	Trabolgan	E583817, N561411
CO100-005	Ringfort- rath	Ballytigeen	E583716, N562157
CO100-032	Ringfort- rath	Carlislefort	E582494, N562178
CO100-033	Ringfort- rath	Carlislefort	E582487, N562066
CO100-040	Country house	Trabolgan	E583770, N560487
CO100-045	Designed landscape feature	Trabolgan	E583744, N560998
CO100-061	Promontory fort- coastal	Trabolgan	E582521, N560138

Appendix 3- National Inventory of Architectural Heritage

REG. NO.	TYPE / NAME	DATE	TOWNLAND
20831012	Saint Michael's Church of Ireland	1880-1885	Corkbeg
20908771	Fort Davis – building misc.	1860-1880	Carlislefort
20908772	Fort Davis – officers house	1860-1880	Carlislefort
20908773	Fort Davis – worker's house	1945-1955	Carlislefort
20908774	Building- misc.	1910-1930	Carlislefort
20908778	Fort Davis – fortification	1860-1880	Carlislefort
20908790	Fort Davis – fortification	1790-1810	Carlislefort
20908791	Fort Davis – barracks	1800-1820	Carlislefort
20908792	Fort Davis – barracks	1800-1820	Carlislefort
20908793	Fort Davis – barracks	1800-1820	Carlislefort
20908794	Fort Davis – barracks	1860-1880	Carlislefort
20908795	Fort Davis - barracks	1940-1960	Carlislefort
20908796	Fort Davis – battery	1860-1880	Carlislefort
20908797	Fort Davis – church/chapel	1940-1960	Carlislefort
20909941	Fort Meagher – barracks	1790-1810	Crosshaven Hill
20909942	Fort Meagher – barracks	1870-1890	Crosshaven Hill
20909943	Fort Meagher – officer's house	1870-1890	Crosshaven Hill
20909945	Fort Meagher – barracks	1790-1810	Crosshaven Hill
20909946	Fort Meagher – office	1820-1840	Crosshaven Hill
20909947	Fort Meagher – battery	1890-1930	Crosshaven Hill
20909948	Fort Meagher – battery	1890-1930	Crosshaven Hill
20909949	Fort Meagher – officer's mess	1820-1840	Crosshaven Hill
20909950	Fort Meagher – sports hall/gymnasium	1935-1945	Crosshaven Hill
20909951	Fort Meagher – workshop	1860-1880	Crosshaven Hill
20909952	Fort Meagher – barracks	1820-1840	Crosshaven Hill
20909953	Fort Meagher – officer's house	1935-1945	Crosshaven Hill
20910001	Gate lodge: Trabolgan House	1850-1870	Trabolgan
20910002	Farmyard complex: Roche's Tower	1780-1800	Trabolgan
20910003	Chimney: Trabolgan House	1840-1880	Trabolgan
20910004	Gate lodge: Trabolgan House	1780-1800	Trabolgan
20910005	Signal tower	1860-1880	Trabolgan
20910007	Roche's Point Lighthouse Keeper's house	1900-1920	Trabolgan
20910008	Roche's Point Lighthouse Keeper's house	1860-1880	Trabolgan
20910009	Roche's Point Lighthouse Keeper's House	1860-1880	Trabolgan
20910010	Roche's Point Lighthouse	1830-1840	Trabolgan

Appendix 4- Shipwreck Inventory

ID	NAME	DATE	LOCATION	DETAILS
W00017	Charming Susana	04 Sep. 1764	Haulbowline Island, Carlingford Lough	Snow of Cork, master was Terence Connor. Driven ashore en route to the West Indies.
W05367	Adelaide	06 Oct.1853	Cobh, Co Cork, Monkstown	
W05370	Albion	25 Nov. 1872	Cork, near	
W05372	Alison (SS) / Allison	22 Oct. 1885	Cork, Haulbowline Pier, mud E of	
W05376	Amor (SS)	05 June 1917	Cork, Cobh, offshore 52.7167, -14.7	
W05389	Britannia	31 May 1791	Cork Harbour	
W05400	Diligence	12 Janu. 1840	Spike Island	
W05408	Emily	23 Feb. 1910	Cork Harbour, Spit Bank, near	
W05413	Fanny Voase	20 Feb. 1838	Roches Point, Co Cork, lighthouse	
W05415	Flora	06 Nov. 1810	Cork, near	
W05416	Foredrin Fredrica	06 Dec. 1877	Cork Harbour, White Bay	
W05421	Hainaut (SS)	12 March 1917	Cork, offshore 52.0833, -11.5	
W05427	Hope	29 Nov. 1850	Cork, Camden Point	
W05433	J.L. Nelson	14 Feb 1916	Cork Harbour	
W05435	Jane	20 March 1818	Cork Harbour	
W05436	John Davies	30 Oct. 1888	Roches Point, Co Cork	
W05443	Linda	26 Nov. 1880	Cork Head and Ringabella, between Roches Point and Queenstown Harbour	
W05446	Luigino B. (SS)	27 Feb. 1917	Cobh, Co Cork, offshore	
W05454	Maria	17 Nov. 1802	Cork, near	
W05460	Nancy	09 July 1867	Roches Point, Co Cork, 7nm from Queenstown	
W05464	No Name	13 Jan. 1896	Cobh, Co Cork, harbour entrance	
W05465	No Name	20 Oct. 1898	Cork Harbour, Hawlbowline Island	
W05466	No. 2	21 Sep. 1911	Cork Harbour, between No. 5&6 buoys	
W05467	Orinoco	07 Jan. 1885	Cobh, Co Cork, under Carlisle Fort	

W05507	Stag	02 Feb. 1794	Cobh, Co Cork, Crosshaven	
W05515	U-400	17 Dec. 1944	Cobh, Co Cork, offshore	
W05519	UC-42	10 Sep.1917	Cork Harbour approaches 51’45’12.9N, 008’12’54.54W	
W05520	UC-44	04 Aug. 1917	Cork, Cobh, offshore 52.15, -6.9833	
W07878	Agapemori Adelfo / Agapinori Adelfo	12 Dec.1849	Cobh, Co Cork, rocks E of lighthouse	
W07881	Aileen	08 June 1906	Cobh, Co Cork, the Chamber	
W07904	America	29 Nov.1893	Cobh, Co Cork	
W07919	Anna	06 Oct. 1852	Cobh, Co Cork	
W07927	Anne	09 Nov. 1750	Cork Sand	
W07932	Annie	16 Aug. 1889	Cobh, Co Cork, Rushbrook	
W07965	Bacchus SW	03 Sep. 1814	Spike Island	
W08018	Britannia	18 Feb.1806	Cobh, Co Cork	
W08020	Britannia	31 May 1791	Cork Harbour	
W08044	Cardiff Lass	04 Oct. 1852	Cobh, Co Cork	
W08047	Cardross	10 Feb. 1874	Cobh, Co Cork	
W08052	Caroline Martin	10 Nov. 1881	Roches Point, Co Cork/Carlisle Point, White Bay	
W08053	Caroline Pemberton	26 Feb. 1856	Cork Harbour	
W08055	Carrie	15 Oct. 1897	Camden Fort Point, at the entrance to Queenstown Harbour	
W08064	Celtic (SS)	10 Dec. 1928	Roches Point, Co Cork	
W08077	Chiapas (SS)	30 Dec. 1882	Roches Point, Co Cork	
W08111	Contest	09 Aug. 1904	Cobh, Co Cork, St. Anne’s Head	
W08126	Crompton	c.1900	Spike Island, off	
W08128	D’Auvergne	25 Sep. 1851	Fort Carlisle, Cork Harbour	
W08160	Doris	19 March 1903	Cobh, Co Cork	
W08418	Derrymore (SS)	May 2017	Cork Harbour	
W08169	Druid	06 Jan. 1819	Cork Harbour	
W08190	Elfin	08 Oct. 1896	Corkbeg Island, Co Cork	
W08192	Eliza	16 Nov. 1798	Cobh, Co Cork	

W08215	Emerald	06 Oct. 1854	Cork Harbour, W side of entrance	
W08238	Examination Boat No. 1	1942	Fort Camden, Cork Harbour	
W08239	Examination Boat No. 3	12 Dec. 1942	Cork Harbour	
W08252	Fanny	09 Jan. 1880	Cobh, Co Cork, 11m SE of	
W08263	Fleswick (SS)	17 Oct. 1908	Haulbowline Island, Co Cork.	
W08286	Frederica	05 Dec. 1877	Roches Point, Co Cork, White Bay	
W08344	Hannah	27 Oct. 1852	Cork Harbour, entrance of	
W08343	Hannah	22 Jan.1811	Cork	
W08347	Harker Brothers	14 April 1871	Cork Head	
W08348	Harlequin	09 April 1850	Cobh, Co Cork	
W08350	Harreman	07 Dec. 1803	Cobh, Co Cork	
W08359	Hector	09 Oct. 1789	Cobh, 'In the Cork Cove'	
W08364	Helenslea	25 Dec. 1881	Roches Point, off	
W08370	Henrietta	Between 14 and 17 Sep. 1776	Cobh, Co Cork	
W08374	Henry & Anne	19 Nov. 1850	Cork Harbour, under Fort Camden/Carlisle Point	
W08418	Inishfail (SS)	1834-1835	Cork Harbour	
W08419	Intrepid	14 Nov. 1852	Cobh, Co Cork	
W08442	Jenny Armstrong	15 Feb. 1876	Cobh Harbour, outside	
W08449	Johanna Henrietta	20 Jan. 1856	Cobh, Co Cork	
W08454	John and Mary	04 Nov. 1811	Cork	
W08457	John Clark	1834	Cork	
W08478	Julia	22 Jan. 1904	Cobh, Co Cork	
W08479	Juno	24 Sep. 1782	Cork Harbour	
W08506	La Suffisante (HMS)	25 Dec. 1803	Spike Island, Co Cork, the spit between (Curlane Bank, S of the island?)	
W08524	Lee	28 Sep. 1870	Cuskinny, Cork Harbour / Cobh, S of	
W08549	Lord Strange	16 Feb. 1749	Cove of Cork	
W08563	Lydia	40 March 1846	Cork Harbour	
W08565	Lynx	09 June 1906	Cobh, Co Cork, Harbour	
W08569	Magnificent	Summer 1835	Cork Harbour	

W08570	Maid of Cove	15 Aug. 1887	Cork Harbour, between No 12 Black Buoy and Carlisle Point	
W08582	Maria	29 Dec. 1900	Cobh, Co Cork, Rocky Island	
W08616	Mary Ann Henderson	Between 7 and 10 Feb. 1846	Cork Harbour	
W08633	Mercur	15 April 1877	Camden Fort, Queenstown Harbour	
W08634	Mercury	15 Sep. 1758	Cork Harbour, Near/in	
W08636	Merion	02 Feb. 1903	Roches Point, Co Cork, White Bay	
W08676	Nautilus	17 May 1893	Cobh, Co Cork, Harbour	
W08697	Nostra Senora de la Conception	14 Nov. 1758	Cork Harbour, near/in	
W08740	Pero	27 March 1843	Whitepoint, near Cork Harbour	
W08751	Phoenix	05 Feb. 1848	Cork Harbour, rocks to W of	
W08752	Phoenix (SS)	27 Aug. 1875	Cobh, Co Cork, bar Rock Buoy	
W08754	Pilot (SS)	12 Feb. 1882	Roches Point, Co Cork	
W08755	Pioneer (SS)	1892	Spike Island, Co Cork, spit bank	
W08767	Premier	13 Jan. 1865	Cork Harbour, White Bay	
W08770	Primrose (SS)	28 Jan. 1941	Cork Harbour, entrance to	
W08775	Prince William	26 Nov. 1784	Cork Harbour	
W08776	Princess Royal	24 Dec. 1878	Camden Fort	
W08800	Rietta	08 March 1875	Church Bay, Queenstown	
W08814	Rose	15 Dec. 1848	Cork Harbour	
W08849	Sarah Jane	13 Dec. 1872	Cork Harbour, rocks at mouth	
W08859	Septimus	12 March 1884	Ram Point, Co Cork	
W08861	Serern Tucker	28 Nov. 1810	Rocky Bay, Co Cork	
W08866	Shamrock	13 Dec. 1854	Cobh, Co Cork	
W08867	Shannon Lass	01 Feb. 1935	Haulbowline wharf	
W08881	Sovereign	07 Jan. 1846	Cork Harbour	
W08891	Spill	05 Sep. 1874	Cobh, Co Cork, Harbour	
W08911	Stag	19 March 1847	Camden Fort, Cork Harbour	
W08922	Sumatra	26 Jan. 1846	Cork Harbour	
W08966	Three Brothers	16 Feb. 1749	Cove of Cork	

W08969	Tiger	09 Aug. 1904	Cobh, Co Cork, St. Anne's Head	
W08980	True Love	08 Nov. 1770	Cork Harbour	
W08986	Undaunted	24 Feb. 1898	Cobh, Cork Harbour	
W09007	Unknown	15 Jan. 1877	Cobh, Co Cork, harbour	
W09009	Unknown	Unknown	Haulbowline Island	
W09010	Unknown	Unknown	Spike Island	
W09199	Unknown	25 Jan. 1776	Cork Harbour	
W09206	Unknown	Unknown	Cork Harbour	
W09207	Unknown	23 Nov. 1804	Camden Fort, Cork Harbour	
W09218	Vanguard (SS)	1844-1856	Roches Point, Co Cork, White Bay	
W09247	Water Lily (SS)	11 Feb. 1895	Spike Island, Co Cork, spit bank?	
W09896	Neptunia (SS)	02 Nov. 1957	51.3333, -8.25	Struck Daunt Rock, beached near Whitegate Bay
W10592	Unknown	01 Oct. 1917	Cork Harbour approaches 51.6483, -8.092	
W11307	Unknown	Unknown	Cork Harbour 51.8244, -8.292	
W11308	Unknown	Unknown	Cork Harbour 51.829, -8.297	
W11309	Unknown	Unknown	Cork Harbour 51.826, -8.281	
W11944	Newport Trader	09 Feb. 1850	Cork Sand	
W12101	Saucy Lass	24 Dec. 1868	The Cork Light, near	
W12292	Amity	21 Aug. 1879	Camden Fort, Queenstown Harbour	
W12989	N.S. de la Conception	14 Nov. 1758	Cork, near	
W13086	Trident	04 Feb. 1804	Cork Harbour	
W13092	Susan	22 Feb. 1805	Harbour Rock, Cork	
W13105	Betty Greg	09 April 1780	Cork, a rock near	
W13113	Dundas	16 June 1806	Cork, near	
W13202	Charlotte	28 Dec. 1798	Cork Harbour	
W13367	Eliza	16 Dec. 1816	Cobh and Cork, between	

W13384	Denis	06 Jan. 1819	Cork Harbour, rocks outside	
W13388	Nancy	22 Jan. 1819	White Bay, Cork Harbour	
W13439	Unknown	17 Jan. 1825	Cork Harbour	
W13622	Henry	15 Feb. 1838	Cork channel	
W13626	Joseph	15 Feb. 1838	Cork Harbour	
W13634	Alert	16 Feb. 1838	Cork Harbour	
W13744	Sousa & Bastos	25 Jan. 1829	Cork Head	
W13911	St. George	05 Feb. 1835	Cork, Dog's Nose bank, inside	
W13922	Allessandra	Unknown	Cork, E of lighthouse	
W13971	Unknown	05 Dec.1830	Cork Harbour	
W14001	Eglinton	10 Feb. 1840	Cork Harbour	
W14081	Samuel Abbot	27 March 1843	Whitepoint, near Cork Harbour	
W14126	Clio	20 March 1844	Cork Harbour	
W14137	Ceylon	07 Sep. 1844	Camden Point, Cork Harbour	
W14138	Welcome Return	16 Sep. 1844	Cork Harbour	
W14157	Unknown	16 March 1838	Carlisle	
W14181	England	16 Nov. 1844	Corkbeg	
W14197	Resistance	30 Nov. 1844	Cork Harbour, eastward of the fort	
W14211	Heywood	13 Dec. 1844	Cork Harbour, Spit Buoy	
W14237	Favourite	26 Dec. 1844	Cork Harbour	
W14252	Clifton	24 March 1845	Cork Harbour	
W14262	Stephen	11 July 1845	Cork Bay Bank	
W14294	Ripley	27 Jan. 1846	Corkbeg, near Cork Harbour	
W14333	Unknown	03 Oct. 1846	Cork Harbour	
W14367	Mary Elliot	19 Nov. 1846	Cork Harbour	
W14369	Eneas	19 Nov. 1846	Cork Harbour	
W14370	Ellen & Margaret	19 Nov. 1846	Haulbowline	
W14401	Unknown	19 Nov. 1934	Cork Harbour	
W14532	Helen Montague	26 Oct.1916	Spike Mudbank, Cork Harbour	
W14551	Unknown	25 March 1847	Cork Harbour, middle spit buoy	
W14716	Arethusa	17 Feb. 1890	Spike Island, Cork Harbour	
W14722	Unknown	27 Feb. 1848	Cork Harbour, near the Lighthouse	

W14746	Clara Felicia	03 Nov. 1890	Weaver's Point	
W14785	Nonantum	16 Dec. 1848	Cork Harbour	
W15209	Nautilus	20 June 1849	Cork Harbour, bank inside Camden Point	
W15581	Unknown	03 Aug. 1923	Cork Harbour	
W15582	Unknown	03 Aug. 1923	Cork Harbour	
W15584	Unknown	Unknown	Cork Harbour	One of four yachts reported foundered at their moorings in Cork Harbour on 3 August 1923 (3 of 4).
W15585	Unknown	03 Aug. 1923	Cork Harbour	One of four yachts reported foundered at their moorings in Cork Harbour on 3 August 1923 (2 of 4).
W15586	Unknown	03 Aug. 1923	Cork Harbour	One of four yachts reported foundered at their moorings in Cork Harbour on 3 August 1923 (1 of 4).
W15587	Unknown	03 Aug. 1923	Cork Harbour	
W15589	Unknown	03 Aug. 1923	Cork Harbour	
W16254	Lightfoot	08 Dec.1817	Cork Harbour	
W16556	Tarifa (SS)	18 April 1870	White Bay, Cork Harbour	Roche's Point, 18th April The TARIFA (s), from New York, when entering Queenstown harbour, grounded inside the Coast Guard station, and is likely to remain there for a tide, the tide is ebbing. Queenstown, 18th Apl. 10 30 a.m. Tugs have gone to the assistance of the TARIFA (s), which ran ashore in White bay, just inside the mouth of the harbour, this morning. Wind East: weather fine.
W16598	Drydens	16 Dec. 1870	Cork Harbour, between Camden Fort and Spike Island	
W16650	Agnes Jack (SS)	13 Feb. 1872	Cork, Blackrock Castle, below	
W16682	Pearl	29 Oct. 1872	White Bay, Cork Harbour	
W16811	Eluzai	20 May 1875	Cork Harbour	

W16848	Bellona	16 March 1876	Cork Harbour, Copper Point	
W16885	Pomona	02 June 1902	Aghada, Adwell near	
W16892	Nouvelle Maria	02 May 1877	Cork Harbour, Church Bay	
W16932	Mathilde	21 Feb. 1878	Cork Harbour, Whitepoint, below	
W16933	Emma	21 Feb. 1878	Cork Harbour, Spit lighthouse	
W16955	Foyle Packet	23 Oct. 1878	Cork Harbour, White Point	
W16969	H.E. Winship	26 March 1879	Cork Harbour, Spike Bank	
W17136	Unknown	06 March 1875	Cork Harbour	
W17367	Unknown	15 Dec. 1772	Cork Harbour	
W17368	Unknown	25 Feb. 1773	Ram Head	
W17372	Unknown	29 April 1777	Cork Harbour	
W17609	Happy Returns	16 Oct. 1886	Cork Harbour	
W17626	Petrel	21 Sep. 1887	Camden Point, Cork Harbour	
W17631	Unknown	14 Dec. 1887	Queenstown and Spike Island, between	
W17716	Royal Alice (SS)	07 March 1860	Cork Harbour, en route from Queenstown	
W17959	Camilla	09 Feb. 1864	Camden Point, Cork Harbour	
W18463	Unknown	05 Feb. 1847	Cork Harbour, western side	
W18469	Brutus	12 Dec. 1844	Spit Buoy, Cork Harbour	

Appendix 5- Borehole Results

Ground Investigations Ireland Ltd
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Site	Borehole Number
UTAS Project Land & Marine - Whitegate/Aghada	TCBH601

Machine	Casing Diameter	Ground Level (mOD)	Client	Job Number
Machine : Beretta T47/S & Dando 1500 Flush : Water Core Dia: 68 mm Method : Rotary Cored	200mm cased to 4.20m 100mm cased to 15.00m	-9.08	Ervia	8011-08-18
	Location (dGPS) 182448.4 E 61478.58 N	**Dates** 19/06/2019	**Engineer** Arup/ByrneLooby	**Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50 0.50					B T		(1.00)	MADE GROUND: Dark grey slightly silty gravelly fine to coarse Sand with some shell fragments		
1.00-1.45 1.00 1.00					2,3/3,5,5,7 SPT(C) N=20 B T	-10.08	1.00	MADE GROUND: Dark grey silty Clay with occasional fragments of timber and shells		
2.00-2.45 2.00 2.00					2,3/2,2,3,3 SPT(C) N=10 B T		(2.10)			
3.00-3.45 3.00 3.00					1,2/2,2,3,2 SPT(C) N=9 B T	-12.18	3.10	MADE GROUND: Timber		
4.00-4.45 4.00 4.00 4.20					4,6/8,8,8,11 SPT(C) N=35 B T	-13.28	(1.10) 4.20	OVERBURDEN: Poor recovery - recovery consists of grey sligihtly sandy gravelly silty CLAY		
	22						(1.00)			
5.10 5.10-5.45					3,6/6,11,10,13 SPT(C) 9*/50 N=40	-14.28	5.20	OVERBURDEN: Poor recovery - recovery consists of grey weathering brown subangular to subrounded fine to coarse Gravel of mudstone		
	10						(1.40)			
6.60				NI		-15.68	6.60	Extremely weak to medium strong thinly laminated dark grey weathering brown MUDSTONE with lenses of fine SANDSTONE. Partially to distinctly weathered.		
	23						(2.60)	Mostly non-intact		
8.10										
	14									
9.20						-18.28	9.20	Weak to medium strong thinly laminated dark grey MUDSTONE with lenses of fine SANDSTONE. Partially weathered.		
	27									

Remarks
Borehole drilled from jack up barge
Barge deck to sea bed: 10.80m
Level (mOD) refers to seabed
0.00m refers to sea bed level
Cable percussion refusal at 4.20m below seabed level
Chiselling from 4.00m to 4.20m for 1 hour.

Scale (approx)	Logged By
1:50	JC

Figure No.
8011-08-18.TCBH601

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Site	Borehole Number
UTAS Project Land & Marine - Whitegate/Aghada	TCBH601

Machine : Beretta T47/S & Dando 1500 Flush : Water Core Dia : 68 mm Method : Rotary Cored	Casing Diameter 200mm cased to 4.20m 100mm cased to 15.00m	Ground Level (mOD) -9.08	Client Ervia	Job Number 8011-08-18
	Location (dGPS) 182448.4 E 61478.58 N	Dates 19/06/2019	Engineer Arup/ByrneLooby	Sheet 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.70	83			NI			(5.80)	Mostly non-intact		
12.20	67	8	8							
13.70	27									
15.00						-24.08	15.00	Complete at 15.00m		

Remarks

Scale (approx)	Logged By
1:50	JC

Figure No. 8011-08-18.TCBH601

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Site	Borehole Number
UTAS Project Land & Marine - Whitegate/Aghada	TCBH602

Machine	Casing Diameter	Ground Level (mOD)	Client	Job Number
Machine : Beretta T47/S & Dando 1500 Flush : Water Core Dia : 68 mm Method : Rotary Cored	200mm cased to 5.40m 100mm cased to 16.00m	-6.58	Ervia	8011-08-18
	Location (dGPS) 182547.3 E 61615.84 N	**Dates** 18/06/2019	**Engineer** Arup/ByrneLooby	**Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							(1.00)	Greyish brown slightly clayey slightly sandy gravelly SILT with occasional rounded cobbles. Sand is fine. Gravel is subrounded to rounded fine to coarse of mixed lithology		
1.00-1.45 1.00 1.00					4,5/5,5,6,7 SPT(C) N=23 B T	-7.58	1.00	Stiff greyish brown slightly clayey slightly sandy gravelly SILT with occasional rounded cobbles. Sand is fine. Gravel is subrounded to rounded fine to coarse of mixed lithology		
							(1.00)			
2.00-2.45 2.00 2.00					2,3/3,5,5,5 SPT(C) N=18 B T	-8.58	2.00	Medium Dense brown sandy silty fine to coarse GRAVEL with occasional rounded cobbles. Sand is fine to Coarse.		
							(1.00)			
3.00-3.45 3.00 3.00					7,7/5,8,7,8 SPT(C) N=28 B T	-9.58	3.00	Stiff light brown slightly sandy gravelly SILT/CLAY with occasional angular to subrounded cobbles of mixed lithology. Gravel is angular to subrounded fine to coarse of mixed lithlogy.		
							(1.00)			
4.00-4.45 4.00 4.00					6,8/11,10,13,12 SPT(C) N=46 B T	-10.58	4.00	Very stiff light brown slightly sandy very gravelly SILT/CLAY with occasional angular to subrounded cobbles of mixed lithology. Gravel is angular to subrounded fine to coarse of mixed lithlogy.		
							(1.00)			
5.00-5.00 5.00 5.00 5.40					25/50 SPT(C) 25*/0 50/0 B T	-11.58	5.00	Dense light brown clayey angular to subangular COBBLES of Sandstone		
							(0.40)			
	38					-11.98	5.40	Extremely weak to medium strong thinly laminated to thinly bedded light grey weathering light brown fine to medium SANDSTONE with bands of light brown slightly sandy gravelly CLAY. Partially weathered to residual. Most clay bands washed away by flush.		
5.80										
	13									
7.30										
	37									
8.80 8.80-8.89					22,3/50 SPT(C) 25*/90 50/0					
	20									

Remarks
Borehole drilled from jack up barge
Barge deck to sea bed: 10.30m
Level (mOD) refers to seabed
0.00m refers to sea bed level
Cable percussion refusal at 5.40m below seabed level
Chiselling from 5.40m to 5.40m for 1 hour.

Scale (approx)	Logged By
1:50	JC

Figure No.
8011-08-18.TCBH602

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Site	Borehole Number
UTAS Project Land & Marine - Whitegate/Aghada	TCBH602

Machine	Casing Diameter	Ground Level (mOD)	Client	Job Number
Machine : Beretta T47/S & Dando 1500 Flush : Water Core Dia: 68 mm Method : Rotary Cored	200mm cased to 5.40m 100mm cased to 16.00m	-6.58	Ervia	8011-08-18
	Location (dGPS) 182547.3 E 61615.84 N	**Dates** 18/06/2019	**Engineer** Arup/ByrneLooby	**Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
								Mostly non-intact		
10.30										
	0			NI			(10.60)			
11.80										
	20									
13.30										
	33									
14.80										
	73	3								
16.00						-22.58	16.00	Complete at 16.00m		

Remarks

Scale (approx)	Logged By
1:50	JC

Figure No. 8011-08-18.TCBH602

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Site	Borehole Number
UTAS Project Land & Marine - Whitegate/Aghada	TCBH603

Machine	Casing Diameter	Ground Level (mOD)	Client	Job Number
Machine : Beretta T47/S & Dando 1500 Flush : Water Core Dia: 68 mm Method : Rotary Cored	200mm cased to 2.40m 100mm cased to 15.00m	-4.10	Ervia	8011-08-18
	Location (dGPS) 182600 E 61642.42 N	**Dates** 20/06/2019	**Engineer** Arup/ByrneLooby	**Sheet** 1/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50 0.50					B T		(1.00)	Dark grey slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of mixed lithology.		
1.00-1.45 1.00 1.00					4,4/5,5,5,6 SPT(C) N=21 B T	-5.10	1.00 (1.00)	Medium dense dark grey slightly slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of mixed lithology.		
2.00-2.45 2.00 2.00 2.40					3,5/6,6,11,10 SPT(C) N=33 B T	-6.10 -6.50	2.00 (0.40) 2.40	Dense dark grey slightly gravelly slightly silty fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of mixed lithology.		
	20							Weak to medium strong thinly laminated to thinly bedded dark grey weathering brown fine to medium SANDSTONE with occasional bands of Clay. Distinctly weathered. Most clay bands washed away by flush.		
3.90	27									
5.40	30			NI			(7.50)	Mostly non-intact		
6.90	87									
8.40	30									
9.90						-14.00	9.90			

Remarks
Borehole drilled from jack up barge
Barge deck to sea bed: 9.00m
Level (mOD) refers to seabed
0.00m refers to sea bed level
Cable percussion refusal at 2.40m below seabed level
Chiselling from 2.00m to 2.20m for 1 hour.

Scale (approx)	Logged By
1:50	JC

Figure No.
8011-08-18.TCBH603

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Site	Borehole Number
UTAS Project Land & Marine - Whitegate/Aghada	TCBH603

Machine	Casing Diameter	Ground Level (mOD)	Client	Job Number
Machine : Beretta T47/S & Dando 1500 Flush : Water Core Dia: 68 mm Method : Rotary Cored	200mm cased to 2.40m 100mm cased to 15.00m	-4.10	Ervia	8011-08-18
	Location (dGPS) 182600 E 61642.42 N	**Dates** 20/06/2019	**Engineer** Arup/ByrneLooby	**Sheet** 2/2

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
	77	13	9					Weak to strong thinly laminated to thinly bedded dark grey weathering brown fine to medium SANDSTONE. Partially to distinctly weathered.		
11.40	67	13	11	NI			(5.10)	Mostly non-intact		
12.90	70	5								
14.40	100	13	13							
15.00						-19.10	15.00	Complete at 15.00m		

Remarks

Scale (approx)	Logged By
1:50	JC

Figure No.
8011-08-18.TCBH603

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