



**ARCHAEOLOGICAL SERVICES IN RELATION TO THE  
PROTECTION OF WRECKS ACT (1973)**

**WRECKS OFF THE COAST OF SHETLAND**

**MARINE GEOPHYSICAL SURVEYS AND INTERPRETATION OF SIDESCAN SONAR  
AND MULTIBEAM BATHYMETRY DATA**

Draft

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### **Summary**

Wessex Archaeology was commissioned by Historic Scotland to undertake geophysical survey over a number of wreck sites off the coast of Shetland; in total eight wrecks were surveyed in detail by sidescan sonar. A further three sites were visited but unable to be surveyed due to bad weather.

Of the eight wreck surveys only one survey did not reveal any geophysical anomalies of archaeological interest, this was the Aith Voe Hull, a named location. Three wreck surveys identified definite archaeological anomalies and the remaining four wreck surveys identified numerous geophysical anomalies, some of them of archaeological potential. The surveys have informed upon the environment and condition of the wrecks and quantitative information has been added to the body of work already existing.

In addition multibeam bathymetry data were acquired from the UKHO and processed and interpreted by Wessex Archaeology. The multibeam bathymetry data analysis identified five anomalies of potential archaeological interest and showed the presence of partially infilled palaeochannels, glimpsing the submerged prehistory of Shetland. The context for these palaeochannels is summarised and further work suggested to build on this.

Throughout this document reference is made to the report preceding this survey, Shipwreck Heritage of Shetland. Desk Based Assessment: Archaeological Report (Wessex Archaeology 2011). This report is intended in support of that document as the surveys were designed based upon the information contained within it.

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The geophysical survey was conducted by Dr Stephanie Arnott and Genevieve Shaw with mobilisation assistance provided by Dr Paul Baggaley. This report was written by Genevieve Shaw with figures produced by Kitty Brandon. The project was managed by Paul Baggaley. The target wreck sites were selected by Graham Scott and approved by Historic Scotland.

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## ARCHAEOLOGICAL SERVICES IN RELATION TO THE PROTECTION OF WRECKS ACT (1973)

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#### 1. PROJECT BACKGROUND

##### 1.1. INTRODUCTION

1.1.1. Wessex Archaeology was commissioned by Historic Scotland through the PWA contract to conduct marine geophysical surveys over a number of wreck sites off the east coast of Shetland. Seventeen wrecks were selected as possible targets, with the actual wrecks surveyed dependant on time available, wind direction and sea state. In total eight wreck locations were surveyed over the three day period from 23rd to 25th September 2011. An additional three targets were attempted and found to be unsuitable due to the extremely shallow and inshore nature of the sites.

1.1.2. The locations of the target wreck sites are illustrated in **Figure 1** and their coordinates are listed in **Table 1**.

Survey Area	Name of wreck	WA ID	Easting	Northing
Outer Skerries	<i>Wrangels Palais</i>	1024	625351	6700849
Lerwick Harbour and southern approaches	<i>Gwladmena</i>	1049	603061	6668023
	<i>Glenisla</i>	1051	603662	6667537
	<i>Drottningen af Sverige</i>	1101	603718	6669356
	<i>Unknown</i> possibly <i>MTB 686</i>	1127	602769	6670572
	<i>Unknown</i> possibly <i>MTB 686</i>	1129	602808	6671973
Cunningsburgh & Helliness	<i>HMS Cheerful</i>	1065	603517	6658063
	Unknown	1149	601088	6658114

**Table 1: Wreck locations taken from Wessex Archaeology 2011 (WGS 1984 UTM 30N)**

##### 1.2. AIMS AND OBJECTIVES

1.2.1. This geophysical report is intended to be read together with the Shipwreck Heritage of Shetland Desk Based Archaeological Assessment (Wessex Archaeology 2011) which assesses the significance of the shipwreck heritage of Shetland and Fair Isle as a whole. The wreck sites surveyed in this field season were high priority sites as identified in the Shetland DBA (Wessex Archaeology 2011). The project, developed as a pilot, is designed to support Historic Scotland's marine heritage designation and management responsibilities and Shetland Amenity Trust's role in marine planning work.

1.2.2. The aim of the geophysical survey was to gather information on known wreck sites in Shetland coastal waters and to inform on the location, identification, extent and survival of archaeological material at these sites. The DBA identified several main themes relating to a ship's build, use, loss, survival and history of investigation (BULSI method). The wrecks

were chosen for survey as they provided a cross-section of the main themes identified in the DBA and the results of the geophysical survey should inform on these.

1.2.3. The objectives of the geophysical survey were as follows:

- to identify, locate and characterise marine sites of potential archaeological interest;
- Establishing the presence (or absence) of archaeological material on or in the seabed, including its position and extents.
- To provide data and/or imagery directly relating to the wrecks and any associated material on the seabed.
- To provide context in terms of a site's overall form and wider setting.
- To assist HS in the implementation of statutory heritage protection legislation. Typically our role has been to provide field-based data to establish whether statutory designation is warranted and to monitor sites that are already designated. Marine geophysics is used as a tool for confirming position, establishing extents, guiding the diver to key features and providing the base for site survey.
- Possibility of recording qualitative detail from sites as the sidescan resolution is so high.

## **2. PROJECT BASELINE**

### **2.1. INTRODUCTION**

2.1.1. The following section presents an updated review of the known and potential archaeological resource pertaining to the targeted wrecks and the prehistory of Shetland. The DBA was a project assessing the shipwreck heritage of Shetland therefore it contained limited information on the prehistory of the islands. While the summary provided here is brief it can inform on the potential of the area for submerged prehistory.

### **2.2. GEOLOGY**

2.2.1. The geology of the Shetlands is varied and complex therefore some generalisations have been made. The coastline of the Shetland Isles is predominantly exposed bedrock, mainly of metamorphic rocks of sedimentary origin with the remainder sedimentary and volcanic rocks of the Devonian period. The chief characteristic of the submarine topography around the islands is the extensive close proximity of the coast to deep water. Also evident are a number of basin features and isolated bedrock. The islands are effectively a heavily glaciated range of hills that have become submerged as a result of sea level rise (Johnson *et al.* 1993).

2.2.2. Late Pleistocene and Holocene deposits, where they exist and have not been eroded or reworked by high energy currents, generally form a thin veneer and are either deposits of the Stormy Bank Sequence or described as undifferentiated Quaternary sediments. Near to the coast there are four discrete areas to the northeast and southwest of the mainland having quaternary deposits of generally less than 25m thick. The deposit is the Stormy Bank Sequence deposited during the last stages of the late Devensian glacial period (Johnson *et al.* 1993).

2.2.3. The seabed sediments within the survey areas are no more than 1m thick and vary from sandy sediments to gravelly sand (Johnson *et al.* 1993; Stoker *et al.* 1993).

### **2.3. PREHISTORY OF SHETLAND**

2.3.1. During the Devensian glacial period, approximately 25,000 years BP, as well as glaciation from the mainland, Shetland developed a local ice cap with the extent of the glacier thought

to be off the north coast of Unst. Rapid deglaciation beginning about 18,000 years BP saw a submergence of the islands with the area becoming ice free by approximately 14,000 years BP. There was a brief return to ice conditions during the Loch Lomond stadial approximately 10,000 years BP (Johnson *et al.* 1993).

- 2.3.2. Shetland's geographic location at the edge of the last glaciation meant that isostatic uplift was not as pronounced as in other areas of Scotland, most noted is an absence of raised beaches. Sea-level may have risen continuously and rapidly from after the last glacial maximum reaching its current levels approximately 4,000 years BP (Johnson *et al.* 1993; Stoker *et al.* 1993).
- 2.3.3. There is not yet an accepted relative sea-level curve for the Shetlands owing to differences in the available models (Bondevik *et al.* 2005). Briefly, at approximately 10,000 years BP the relative sea level was over -45m below mean tide level. During the Mesolithic the relative sea level rose from approximately -35m to -8m below mean tide level.
- 2.3.4. The sea-level is still rising but at a much slower rate as historic records describe areas that could once be forded are now completely submerged. The type of evidence available for studying the post-glacial environment is submerged peats formed during the Holocene.
- 2.3.5. Peat deposits on land have been dated to as early as 40,000 years BP and give information on the interglacial environment of that period. Peat deposits on land have also been used to date horizons associated with three separate tsunamis during the Holocene, the earliest dating to 8,100 years BP (Bondevik *et al.* 2005).
- 2.3.6. Submerged peat deposits have been dredged up either side of Bressay Voe with large quantities of birch surviving at a depth of -9m below mean tide level. Radiocarbon dating of the sample dredged up in 2008 between Green Head Quay and Scuttle Home obtained a radiocarbon date of 5670-5550 cal BC (Discovery and Excavation 2011). A stone axe was also found with the deposits from the north side of the Voe on Bressay shore but this deposit was not dated (P. Robertson *pers. comm.*). The evidence obtained from the birch samples gives an indication of the rising sea levels and the environment over the past 7,000 years.
- 2.3.7. The earliest human occupation of the Shetlands is evidenced by an oyster shell midden eroding from a cliff section at West Voe, Sumburgh at the south end of the mainland. The lower deposit was dated by optically stimulated luminescence to  $4830 \pm 430$  BC giving it a late Mesolithic/early Neolithic age with an upper deposit radio carbon dating to 3750 – 3520 cal BC. The presence of a shell midden would suggest that there is likely to be a settlement in the immediate area and there is evidence of Neolithic settlement in the area. It was previously thought that Mesolithic sites, being predominantly situated near what would have been the current coastline, would have been submerged during post-glacial marine transgression (Melton & Nicholson 2004).
- 2.3.8. Further submerged evidence relating to the potential for the early human occupation of the Shetlands is found 150km north-east of Lerwick at a water depth of 143m. A single flint tool, identified as a scraper and typologically dated to the Upper Palaeolithic, was found in a vibrocore off the Viking bank. It was found in a layer of silty sand 28cm below the seabed, the layer being interpreted as a lag deposit formed from sediments reworked during the last marine transgression (Long *et al.* 1986). Viking Bank itself in the late Devensian is described as an area of relatively flat coastal land which may have remained exposed into early Holocene times (Johnson *et al.* 1993). This shows that there is the potential for artefacts to survive the effects of marine transgressions, in at least a reworked context.



## 2.4. MARITIME

- 2.4.1. Maritime sites can be defined as broadly comprising either vessels or debris which has been accidentally or deliberately lost overboard from a vessel. As an island nation, the UK has a long maritime history and there is potential for the archaeological evidence of maritime sites of all periods dating from the Mesolithic period to the present (Wessex Archaeology 2011).
- 2.4.2. The DBA researched and collated information on over 1,800 wrecks and wreck losses around the coast of Shetland and Fair Isle.
- 2.4.3. Below is an overview of why each wreck was chosen and the themes that it can inform upon, as identified in the DBA.

<b>Wreck and WA ID Number</b>	<b>Date of construction to date of loss</b>	<b>Type of vessel</b>	<b>Theme(s)</b>
<i>Wrangels Palais</i> WA 1024	1669 - 1687	Merchantman/Danish warship	War, Trade, Fishing, Date: Early vessels
<i>Drottningen af Sweriga</i> WA 1101	1741 - 1745	Danish East Indiaman	Trade, Date: Early vessels
<i>Gwladmena</i> WA 1049	1878 - ?	Iron screw steamer	War, Trade, Date
<i>Glenisla</i> WA 1051	1878 - 1917	Steamship	War, Trade, Vessel construction, Date
Unknown WA 1127	Lost: 1943	Motor Torpedo Boat	War
Unknown WA 1129	Lost: 1943	Motor Torpedo Boat	War
<i>HMS Cheerful</i> WA 1065	1897 - 1917	Royal Navy Destroyer	War, Date
Unknown WA 1149	Lost: 1867	Unknown hull of a vessel	N/A; to establish presence/absence of a wreck

## 3. SURVEY METHODOLOGY

### 3.1. DATA SOURCES

- 3.1.1. Wessex Archaeology acquired sidescan sonar data from their investigation of the wreck locations in September 2011.

- 3.1.2. The sidescan sonar data were assessed for quality and were rated as mostly ‘Good’ with some survey lines ‘Variable’ using the following criteria in **Table 2**.

Data Quality	Description
Good	Data which are clear and unaffected by weather conditions or sea state. The dataset is suitable for the interpretation of standing and partially buried metal wrecks and their character and associated debris field. These data also provide the highest chance of identifying wooden wrecks and debris.
Average	Data which are affected by weather conditions and sea state to a slight or moderate degree. The dataset is suitable for the identification and partial interpretation of standing and partially buried metal wrecks, and the larger elements of their debris fields. Wooden wrecks may be visible in the data, but their identification as such is likely to be difficult.
Variable	This category contains datasets with the quality of individual lines ranging from good to average to below average. The dataset is suitable for the identification of standing and some partially buried metal wrecks. Detailed interpretation of the wrecks and debris field is likely to be problematic. Wooden wrecks are unlikely to be identified.

**Table 2: Criteria for assigning data quality rating**

- 3.1.3. The digital data were recorded with the vessel position provided via Hypack; layback was applied to the data during processing.
- 3.1.4. Bathymetry data held by the UKHO were used to supplement the survey conducted around the Shetland Islands. This data has been provided under the ‘gather once; use many times’ principle adopted by the CHP and MCA. This data were acquired for hydrographic purposes and conforms to the MCA technical requirements for data collection (MCA 2011) and as such are of good quality.

## 3.2. GEOPHYSICAL DATA – TECHNICAL SPECIFICATIONS

- 3.2.1. The sidescan sonar data assessed for this report were acquired by Wessex Archaeology between the 23rd and 25th September 2011. The survey vessel used by Wessex Archaeology was the 12m long *Moder Dy*, owned and operated by the North Atlantic Fisheries College in Scalloway. The vessel operated out of Lerwick for the duration of the survey. Mobilisation of the survey equipment onto the vessel commenced on 20th September 2011. Wet testing of the survey equipment was completed on 22nd September in Lerwick Harbour. The weather was only suitable for surveying to be carried out on three days, the 23rd to 25th of September. The vessel was demobilised on 26th September.
- 3.2.2. For the wreck survey areas sidescan sonar line spacing was either 20m or 40m and the vessel track plots for the individual survey areas are illustrated alongside the results from each wreck location in **Figures 2 - 9**.
- 3.2.3. Klein 3900 high frequency (500/900 kHz) digital sidescan sonar was deployed off the stern of the vessel. Shallow wrecks were surveyed at 20m line spacing and a sidescan sonar range of 30m using the high frequency of 900 kHz for maximum resolution. Deeper wrecks were surveyed with a line spacing of 40m and a range of 75m using the lower 500 kHz frequency. It was not possible to survey these wrecks with a shorter range owing to the limitations imposed by the length of the sidescan fish soft tow cable and the fish consequently flying too high above the seabed.
- 3.2.4. Primary positioning was provided by a Hemisphere GPS R131 Receiver. Navigation was performed using Hypack software interfaced with a Hemisphere GPS. This enabled all wreck positions to be entered as targets and for survey lines to be planned around them. For this survey all positions were recorded and expressed as WGS84 UTM 30N.

- 3.2.5. As detailed in **Table 1** the wreck sites proposed for investigation are located in three distinct areas. These are: Lerwick and the southern approaches, Cunningsburgh and Helli Ness, and Outer Skerries.
- 3.2.6. For the wrecks with well known, accurate positions an initial survey line was collected over the location to verify the exact position. Further lines of data covering an area of 200m x 200m were collected, where allowed by the adjacent coastline and water depth.
- 3.2.7. For wrecks with approximate positions a long range low frequency line of data was acquired over the given position. Further lines were run to cover the seabed adjacent to the given position. On location of the wreck further survey lines would be run with a shorter range and closer line spacing over the wreck and surrounding seabed.
- 3.2.8. Multibeam data assessed for this report were acquired for the MCA under the Civil Hydrographic Program (CHP). CHP surveys are required to obtain 100% bathymetric coverage of the areas surveyed using approved multibeam echo sounders. The system detection capability must conform to IHO requirements and must be able to detect objects measuring greater than 2mx2mx2m in depths of up to 40m. Coverage must also include a minimum of 9 soundings per minimum detectable object. The data provided has been tidally reduced to Chart Datum (CD). The multibeam bathymetry survey area extents are shown in **Figure 1** and **10**.
- 3.2.9. The UKHO data assessed for this project covers seventeen survey areas, predominantly on the western side of the Shetland Islands. The data for each area were provided as separate files, with raw .gsf files provided for eleven of the areas and gridded .txt files for the remaining six (**Table 3**).

Survey Area	Format	Cell Size (m)
HI1335 Block 3	.gsf	2
HI1335 Block 2	.gsf	2
HI1335 Block 1	.gsf	2
HI1322 Block 5	.gsf	2
HI1322 Block 4	.gsf	2
HI1322 Block 3	.gsf	2
HI1322 Block 2	.gsf	2
HI1322 Block 1	.gsf	2
HI1274 Block 6	.gsf	2
HI1274 Block 5	.gsf	2
HI1274 Block 4	.gsf	2
HI1274 Block 3	.txt	10
HI1274 Block 2	.txt	10
HI1274 Block 1	.gsf	2
Additional (SULLOMV)	.txt	20
Additional 2	.txt	5
Additional 3	.txt	5

**Table 3: Survey area file formats**

### 3.3. GEOPHYSICAL DATA – PROCESSING

- 3.3.1. The sidescan sonar data were processed by WA using Coda Geosurvey software. This allowed the data to be replayed with various gain settings in order to optimise the quality of the images. The data were initially scanned to give an understanding of the geological nature of the area and were then interpreted for any objects of possible anthropogenic origin: the

position and dimensions of any such objects were recorded into a gazetteer and an image of each anomaly acquired.

- 3.3.2. The form, size and/or extent of an anomaly are a guide to its potential to be an anthropogenic feature, and therefore its archaeological interest. A single small but prominent anomaly may be part of a much more extensive feature that is largely buried. Similarly, a scatter of minor anomalies may define the edges of a buried but intact feature, or it may be all that remains as a result of past impacts from, for example, dredging or fishing. The application of a ratings system is therefore a means of prioritising sites in order to inform further stages of the interpretation process and on its own is not definitive.
- 3.3.3. The multibeam data were processed and analysed by Wessex Archaeology using the Fledermaus (v.7) software suite. This enables bathymetric datasets to be managed and gridded as well as the creation of 3D visualisations.
- 3.3.4. The raw .gsf files provided dense datasets which were gridded at a cell size of 2m, limited by the extent of the coverage and file size. Using Pure File Magic (PFM) in Fledermaus it was possible to identify features of interest and grid smaller areas at higher resolution. There was some variation in the data provided as .txt files, and the data had to be gridded at lower resolutions. This may be a by-product of the gridding process or data collected before swathe bathymetry was a standard hydrographic tool.
- 3.3.5. Gridding the data a 2m was sufficient to identify wrecks proud of the seabed. UKHO records of known wrecks were compared to the bathymetry data to assess their current condition.
- 3.3.6. The 3D surface model created also allowed the wider seabed to be assessed. A by-product of this was the identification of partially infilled channels which may be evidence of palaeochannels and past dendritic systems. These partially infilled channels were traced in Fledermaus to create shapefiles which could be compared to geological maps in GIS.

### 3.4. GEOPHYSICAL DATA – ANOMALY GROUPING AND DISCRIMINATION

- 3.4.1. The previous section describes the initial interpretation of all available geophysical data sets which were conducted independently of each other. This inevitably leads to the possibility of any one object being the cause of numerous anomalies in different data sets and apparently overstating the number of archaeological features in the study area.
- 3.4.2. To address this fact the anomalies were grouped together. This allows one ID number to be assigned to a single object for which there may be, for example, a UKHO record, a multibeam bathymetry anomaly and multiple sidescan sonar anomalies.
- 3.4.3. Once all the geophysical anomalies had been grouped a discrimination flag is added to the record in order to discriminate against those which are not thought to be of an archaeological interest. These flags were ascribed as detailed in **Table 4**.

Non-Archaeological	U1	Not of anthropogenic origin
	U2	Known non-archaeological feature
	U3	Non-archaeological hazard
Archaeological	A1	Anthropogenic origin of archaeological interest
	A2	Uncertain origin of possible archaeological interest
	A3	Historic record of possible archaeological interest with no corresponding geophysical anomaly

**Table 4: Criteria for discriminating relevance of seabed features to proposed scheme**

- 3.4.4. To address this fact the anomalies were grouped together. This allows one ID number to be assigned to a single object for which there may be, for example, a UKHO record, a multibeam bathymetry anomaly and multiple sidescan sonar anomalies.
- 3.4.5. All the sites that have been identified within the study areas are presented in Appendix I and discussed in this report.
- 3.4.6. The grouping and discrimination of information at this stage is based on all available information and is not definitive. It allows for all features thought to be of archaeological interest to be highlighted, while retaining all the information produced during the course of the geophysical interpretation for further evaluation should more information become available.

## 4. ARCHAEOLOGICAL ASSESSMENT RESULTS

### 4.1. SIDESCAN SONAR ASSESSMENT

#### Wrangels Palais

- 4.1.1. The wreck of the *Wrangels Palais* is located on the eastern side of the Outer Skerries. Owing to the very exposed location it was necessary to survey this wreck on the day with the calmest weather. The wreck lies close to the Outer Skerries lighthouse at a depth of approximately 35m yet very close inshore in an area of rocky shore. It is a designated wreck site under the Protection of Wrecks Act 1973 and is of national significance. Previous investigations of the wreck site have been through a pre-disturbance survey, a trial trench and an ROV survey.
- 4.1.2. It was only possible to survey lines to the east of the wreck's location as the wreck itself is located in an area of protruding bedrock. The sidescan sonar towfish was towed at an altitude of approximately 20m above the seabed. Consequently, the use of the 900 kHz frequency with a short range was not possible. The wreck was surveyed with a frequency of 500 kHz and a range of 75m, with a line spacing of 40m.
- 4.1.3. The survey covered an area of 450m x 250m approximately centred on the UKHO location given for the site. From previous investigations and diver reports there are two findspots beyond the site; two small iron guns to the southwest and a small concretion about 100m away and the aim of the survey here was to try and identify any artefacts or spread of debris away from the wreck site. The data quality was variable with noise from swell and pitch clearly seen.
- 4.1.4. Two anomalies have been identified as of potential interest from the survey (**Figure 2**). **7000** is a discrete area of curvilinear connecting bright reflectors measuring approximately 28 x 17m, it is in an area of soft sediment and rocky outcrops can be seen surrounding the area. **7001** is an approximately circular dark reflector measuring 5 x 12 x 2m with an irregular shadow. The entire designated area was not surveyed due to its proximity to the shore and there are possibly more anomalies inshore.

#### Gwladmena

- 4.1.5. The survey covered an area of approximately 370 x 500m centred on the UKHO wreck location given for the site. The *Gwladmena* is described by the UKHO as largely buried in sand, lying at a general depth of 35m and as having sonar dimensions of 67.1 x 9.1 x 4.9m. From the sidescan sonar data, the wreck is seen lying upright in an area of coarser sediment ripples oriented approximately north-south. Anomaly **7004** is the wreck itself with anomaly **7005** a large piece of debris just to the north of the wreck (**Figure 3**). **7004** is an area of numerous linear and connecting curvilinear dark reflectors showing structural detail of a

wreck measuring approximately 80 x 17.5 x 4m. The width of the wreck itself measures approximately 10.5m but due to collapsed areas and the spread of debris, especially on the starboard side, the width of the wreck area increases to 17m. The sidescan sonar wreck position is approximately 60m northeast of the recorded UKHO position.

- 4.1.6. Survey lines were run north-south and east-west and therefore two different views are afforded to add to the detail. From the north-south survey lines the wreck appears relatively intact at both the bow and stern but considerable damage is visible on the port mid-section where a break can be seen in the side of the wreck. Large linear pieces of debris are seen to the starboard side lying next to the wreck. There are at least two linear dark reflectors in the shadow therefore more debris could be lying in this area but obscured. The east-west survey lines show increased structural detail with ribbing clearly seen within the wreck outline. The bow is relatively intact but the stern appears collapsed. The mid-section is again seen to be damaged on the port side with a large linear dark reflector lying off the side.
- 4.1.7. Anomalies **7002-7003**, **7006-7016** are all interpreted as pieces of debris from the wreck, this is because the surrounding seabed is generally featureless and there are no large concentrations of modern debris visible. They probably relate to the *Gwladmena*. **7002** is a small curvilinear dark reflector in sandy sediment next to an area of outcropping bedrock. **7003** is two parallel curvilinear bright reflectors 46m in length and 11m at their widest distance apart. It may be an anchor scar and it is approximately 30m from the stern of the wreck. There are no other scars like this in the immediate area.
- 4.1.8. **7006** is three small circular bright reflectors in a linear orientation 6.5m in length and some 20m from the bow of the wreck. **7007** is a hard curvilinear dark reflector 6m x 0.5 x 0.5m with a further circular anomaly at the end of it, they could be two separate pieces of debris or they could be part of the same piece of debris but partially buried in sediment. **7008** is a curvilinear dark reflector with a further thin linear dark reflector coming off the end and is possibly debris. **7009** is two linear dark reflectors, one is very thin and long 4m x 0.1 x 0.2m, the other is thicker and shorter 2 x 0.2 x 0.2 with a small scour mark off one end. These two pieces of debris lie 190m away from the stern of the wreck could be either from the *Gwladmena* or of modern origin.
- 4.1.9. **7010 – 7016** are all larger dark reflectors identifiable as debris. With the exception of **7010** they all lie starboard off the wreck, up to 120m away. The UKHO description describes the stern gun lying on the seabed along with other larger pieces of equipment such as the port anchor. **7010 – 7016** are all probably pieces of debris such as this but they cannot be positively identified. Anomalies **7017-7018** are two ring shaped bright reflectors 1 x 1m lying close to the wreck, they are interpreted as tyres and could be either wreck debris or modern.

### **Glenisla**

- 4.1.10. The wreck of the *Glenisla* is described by the UKHO as partially intact, sitting upright on a sandy seabed lying at a general depth of 45m. There are a number of diver descriptions, photographs and a video, therefore quite a lot of detail is known about the condition of the wreck. However, sonar dimensions were not known and a set of measurements can now be added to the body of material on this wreck. **7019** is a large discrete area containing numerous large linear dark reflectors identified as the structure of a wreck with many more smaller linear and curvilinear anomalies showing a large quantity of debris still within the wreck itself. The wreck measures approximately 78.5 x 24.5m and stands to a height of nearly 8m, it is oriented approximately North-South (**Figure 4**). The sidescan sonar position of the wreck is approximately 18m to the east of the recorded UKHO position.
- 4.1.11. The wreck appears relatively intact and upright with a slight lean to the west. The higher frequency sidescan sonar data reveals a large amount of detail, with collapsed debris into the



bottom of the wreck from upper levels visible. It is difficult to distinguish the bow and stern definitely due to part of it being damaged, with a break in the outline between the northern end and the side of the wreck. At the southern end of the wreck but towards the mid-section there is a further break in the outline of the wreck indicating collapsed structure and further damage. Whereas the southern end of the wreck contains smaller pieces of debris and appears very dense, the northern section has much larger anomalies, up to 15m long, and looks like larger structural pieces which have collapsed. There are several small linear and curvilinear dark reflectors up to 5m in length in the shadow of the wreck and this is more debris.

- 4.1.12. Associated with the wreck are two further anomalies: **7020** is an area of debris 10m x 6m and **7021** is a single piece of debris 2 x 1 x 0.2m. The area of debris lies approximately 15m from the wreck and is partially buried in sediment with only separate thin linear anomalies visible, but presumed to be part of the same feature. The single piece of debris is rounded with some height and there is a faint long scour mark off one end, it lies approximately 25m from the wreck. Just to the north of the wreck are at least three ring shaped bright reflectors **7023**, these are tyres which could either be associated with the wreck or modern debris, as seen above in the *Gwladmena* survey.
- 4.1.13. **7022** and **7026** are linear dark reflectors in areas of soft sediment, they are dragging scars. **7022** is curvilinear approximately 26.5 x 1.5m and is to the north of the wreck as with **7026** they do not have a pieces of debris visible. **7024**, **7027**, **7028** and **7031** are all small linear dark reflectors between 2.5 and 5m. **7025** is difficult to interpret, it is a circular dark reflector attached by a thin linear to a long curvilinear dark reflector, overall measuring 12 x 10m. Over 240m east of the wreck **7030** is an area of debris measuring 14 x 13.5m but it cannot be confidently associated with the wreck.
- 4.1.14. **7023**, **7029**, **7032** are ring shaped bright reflectors and are all identified as tyres and therefore classed as modern debris.

#### **HMS Cheerful**

- 4.1.15. *HMS Cheerful* is a World War I Royal Navy destroyer with a UKHO position based on a reported loss location off Helli Ness in a depth of approximately 80m. The position is given approximately and the wreck may be up to 0.5 miles from the reported position. Owing to the deep water, the sidescan towfish was towed with the soft tow cable at an altitude of approximately 65m above the seabed. A search of an area around the wreck measuring approximately 2100 by 1350m was conducted but no evidence of the wreck was seen. Following local information that the wreck may be located approximately 300m NW of the reported position it was proposed to make a second attempt to locate the wreck. However, the weather was not good enough and the attempt had to be abandoned. If it is indeed in that area then it is likely to be broken up and not detectable by the long range data used in the original attempt to locate it.
- 4.1.16. Two anomalies of interest were identified from the sidescan sonar survey (**Figure 5**). **7033** is an area of seafloor disturbance 34 x 19 x 0.3m and **7034** is an area of seafloor disturbance measuring approximately 28.5 x 21m and both may be natural in origin. They are both discrete patches containing numerous small curvilinear dark reflectors and as they are at the beginning of the survey line therefore they do not have surrounding survey data to further characterise them and place them in context. The survey area itself is dominated by rocky outcrops rising out of soft sediment, similar to the description given by a local diver to where he believes the wreck to lie (Wessex Archaeology 2011).

#### **Drottningen af Sverige**

- 4.1.17. The *Drottningen af Sverige* (Queen of Sweden) is a mid-eighteenth century Danish East Indiaman. Located off Twagoes Point, Lerwick in a depth of approximately 25m this is an

archaeologically important and well known wooden wreck. The SMR reports that ‘Little remains of vessel except a few iron cannon...Occasional artefacts can be located by systematic searching in the crevices’ (Wessex Archaeology 2011). As with the survey of the *Wrangels Palais* where the wreck position lay in a rocky outcrop, the aim again here was to identify any potential pieces of debris in the vicinity of the wreck.

- 4.1.18. Eight anomalies of archaeological interest were identified and they all are located in the upper part of the survey area around the wreck site (**Figure 6**). **7035, 7038, 7039, 7040, 7041, 7048, 7049, and 7052** are all linear or approximately square dark reflectors between 1 and 5m in length. There are a large number of tyres in the area, which have been classed as modern debris. However there are anomalies identified in between the tyres, which could be debris associated with the wreck, although there is also the high possibility that they are modern debris.
- 4.1.19. The following anomalies have a discrimination of U2 and are identified as modern debris consisting of anomalies identified as tyres and fishboxes. The anomalies are **7036, 7037, 7042 – 7047, 7050, 7051, and 7053 – 7097**. The survey covers an area of outcropping bedrock; there could be further anomalies within the gullies and crevices which have not been identified by the sidescan sonar data.

#### **Motor Torpedo Boats Numbers 626 and 686**

- 4.1.20. Two Motor Torpedo Boats were sunk in Lerwick Harbour in 1943 but it is not known which wreck is 626 or 686. The site of WA ID 1127 lies on the Lerwick side of Bressay Sound, close to the Shetland Museum, in very shallow water and extremely close inshore. The site is well known and visited by divers. Two of the engines of the vessel are said to be visible, along with a quantity of aluminium fish boxes, and it has tentatively been identified as Motor Torpedo Boat 686 (K. Thompson, pers comm). Owing to the dock wall, piers and other structures it was not possible to run a standard grid of survey lines. The site was surveyed with the 900 kHz frequency, a range of 30m and an approximate line spacing of 20m.
- 4.1.21. **7356** is an area measuring approximately 3 x 9 x 0.5m, one half contains several interconnecting curvilinear dark reflectors showing structure of a wreck and the other half is a large linear dark reflector with smaller dark reflectors immediately adjacent. The wreck appears broken in two and lying on its side. There are numerous small linear and curvilinear dark anomalies surrounding the wreck which are probably associated debris. The position of this anomaly is approximately 15m southeast of the current UKHO wreck position. Immediately to the west of the wreck is a large area, **7354**, filled with more linear and curvilinear dark reflectors. These anomalies are clearly debris but it cannot be distinguished whether they are associated with wreck **7356** or modern debris or most likely a mixture of both.
- 4.1.22. **7339** is a large spread of linear dark reflectors all in different orientations (**Figure 7**), there is a concentration of material measuring 6.5 x 5.5m with numerous pieces of debris scattered around it, covering an overall area of approximately 23 x 23 x 0.5m. It has been ascribed wreck status due to its appearance and dimensions in comparison to other anomalies in the area even though there is a lot of modern debris within the area and it does not have clearly visible structure.
- 4.1.23. The list of following anomalies is particularly detailed as they are not identifiable as either tyres or fishboxes. They have therefore been assigned an archaeological discrimination of A2. Clearly some of these will be modern debris inferring this from the large quantity already clearly identified but as the wreck **7356** lies within this area it is not possible to distinguish at this scale or resolution whether it is from the MTB or modern dumping within the harbour. All the anomalies are linear, curvilinear or approximately circular dark reflectors generally no more than 3m in length and width. The anomalies are **7098, 7099,**



7102 - 7109, 7112, 7114, 7119 – 7124, 7129, 7131, 7134, 7136, 7137, 7138, 7147, 7148, 7152, 7154, 7162, 7163, 7167, 7169 – 7171, 7179, 7189, 7190, 7205, 7209, 7219, 7220, 7222, 7223, 7230, 7231, 7233, 7235, 7236, 7239, 7240, 7245, 7247, 7248, 7252, 7256, 7257, 7259, 7261, 7265, 7269, 7272, 7274 – 7277, 7279 – 7283, 7285, 7287, 7290, 7292, 7296, 7298, 7301 – 7303, 7306, 7307, 7309, 7310, 7312, 7319, 7321, 7324, 7327, 7328, 7330, 7331, 7335, 7337, 7338, 7341, 7342, 7348, 7349, 7350, 7354, 7355, 7358, 7359, 7360, 7362, 7363, 7364, 7365, 7366.

- 4.1.24. The following anomalies all have an archaeological discrimination of U2 identifying that they are known non-archaeological features; in this case they are tyres and fishboxes assumed to be all modern debris. They have been identified individually for these survey areas because of the density of anomalies and the proximity of modern debris to anomalies of archaeological interest. The anomalies are 7100, 7101, 7110, 7111, 7113, 7115-7118, 7125-7128, 7130, 7132, 7133, 7135, 7139-7146, 7149-7151, 7153, 7155, 7156, 7157-7161, 7164-7166, 7168, 7172-7178, 7180-7188, 7191-7218, 7221, 7224-7229, 7232, 7234, 7238, 7241, 7244, 7246, 7249, 7251, 7253, 7255, 7260, 7262, 7265, 7266, 7267, 7270, 7271, 7273, 7278, 7284, 7286, 7288, 7289, 7291, 7293-7295, 7297, 7299, 7300, 7304, 7305, 7308, 7311, 7313, 7318, 7320, 7322, 7323, 7325, 7326, 7329, 7332, 7334, 7336, 7340, 7343, 7344, 7347, 7351-7353, 7357, 7361, 7367, 7368, 7369.
- 4.1.25. WA ID 1129 is thought to be the wreck of a motor torpedo boat (MTB) that was sunk at the same time as WA ID 1127, possibly number 326 if the other MTB is identified as 386. It is located in very shallow water of less than 6m depth, on the eastern side of Lerwick Harbour in Heogan Bay. The location appears to be well known to vocational divers and there is little to be seen on the seabed of which the surviving debris is mainly in the form of wooden debris flattened to the seabed with small pieces of engine debris scattered around (K. Thompson, pers comm.). Owing to the close inshore location of the site it was only possible to run lines to the east of the target location. The site was surveyed with the 900 kHz frequency, a range of 30m and an approximate line spacing of 20m.
- 4.1.26. Within the survey area there were no geophysical anomalies clearly identifiable as those of a wreck (**Figure 8**). Anomalies 7429 is a rounded weak dark reflector measuring 1 x 0.5 x 0.4m, 7430 is a short weak linear dark reflector measuring 1 x 0.2 x 0.5m and 7431 is a thick linear strong dark reflector with an elongated pointed shadow. The three anomalies are all within 20m of the UKHO recorded wreck position; they have been highlighted because they could be the remains of surviving debris from the wreck of the second Motor Torpedo Boat.
- 4.1.27. All the anomalies listed here are interpreted as of A2 archaeological discrimination. All the anomalies are linear, curvilinear or approximately circular dark reflectors generally no more than 3m in length and width, they are 7370 – 7372, 7374, 7375, 7377, 7378, 7379, 7388, 7391, 7393, 7394 – 7396, 7398 – 7400, 7404, 7405, 7407, 7408, 7411, 7412, 7413, 7416, 7417 – 7420, 7422, 7423, 7433 – 7436, 7438, 7441, 7443, 7444, 7445, 7446, 7448 – 7451, 7461, 7462, 7464, 7469, 7470, 7474, 7475, 7477 and 7478.
- 4.1.28. The following anomalies all have an archaeological discrimination of U2 identifying that they are known non-archaeological features; in this case they are tyres and fishboxes assumed to be all modern debris. The anomalies are 7373, 7376, 7380, 7381-7387, 7389, 7390, 7392, 7397, 7401-7403, 7406, 7409, 7410, 7414, 7415, 7421, 7424-7428, 7432, 7437, 7439, 7440, 7442, 7447, 7452- 7460.

#### **Unknown wreck WA ID 1149**

- 4.1.29. The final wreck (Unknown WA ID 1149) is located on the northern side of Helli Ness, off Aithsetter, sheltered from the southerly winds prevalent during the survey period. The wreck is the hull of a vessel reportedly sunk in 1867, this record is based upon a sighting and the

position is not accurately known. No anomalies of archaeological interest were identified in the sidescan sonar data (**Figure 9**).

- 4.1.30. Three targets were attempted; the Concordia (WA ID 1099), the Aith Voe hulk (WA ID 1146) and the Good Friend (WA ID 1148). This wreck of the Concordia is located on the southern side of Helli Ness. Owing to the strong southerly wind it was not possible to survey this wreck as the sea in this area was too rough. The Aith Voe hulk is described as a hulk lying on the west side of Aith Voe, near Cunningburgh. Owing to the extremely shallow, inshore location it was not possible to survey this wreck. The site of the Good Friend lies close to the entrance of Leira Voe, Bressay. The location is very shallow, in a rocky area close to some large rocks protruding above sea level and at the time of survey there was an onshore wind. Consequently this site could not be surveyed.

## 4.2. MULTIBEAM BATHYMETRY ASSESSMENT

- 4.2.1. The multibeam data were assessed for anomalies, specifically wrecks and seabed topographical features likely to be of potential archaeological interest for submerged prehistory. As there is only multibeam bathymetry data to assess, this review is preliminary concerned with its main aim to assess areas for their potential for the existence and preservation of submerged prehistoric archaeology.
- 4.2.2. The types of features that are indicative for the purposes of a palaeo-geographic assessment are features such as under filled channels, cliff edges and other prominent landscape features. The results of this assessment are illustrated in **Figures 11** and **12**.
- 4.2.3. The multibeam survey area has been divided up into three parts, Area A (HI1274), Area B (HI1322) and Area C (HI1335) which reflect the data packages provided by the UKHO (**Figure 11**).
- 4.2.4. A number of partially infilled channels have been identified in the data across the three survey areas A, B and C (**Figure 12**). These may be evidence of palaeochannels and past dendritic systems owing to runoff from glacial meltwater of the local Shetland ice cap. Five further anomalies were identified and interpreted as wrecks; however the multibeam survey areas did not overlap with the sidescan sonar survey areas and it is not possible to provide more detailed interpretation of these wreck sites.
- 4.2.5. Area A has two interesting features; the first is a large deeper basin-like feature with a secondary depression within it, this deeper feature is probably glacial erosion in origin and has then been infilled over time. Whether or not it can be interpreted as having a good sedimentary sequence preserved within it depends on the currents and the amount of reworked deposits that are generally thought to have destroyed any surviving in situ palaeo-potential. This basin-like feature is bounded by some higher ground out towards the sea so there is the possibility that at some point when the sea-level was much lower it was a lake. Comparisons with geology mapping indicate that this feature is the location of Stormy Bank deposit of Holocene age. The second feature in Area A is an island-like feature coming off the mainland into the ‘basin’.
- 4.2.6. Area B has a large linear trough shaped feature oriented approximately north-south. Running across and into it are a network of smaller, partially infilled channels. Area C is mainly coastal bedrock extending for most of the width of the survey area indicating fairly shallow water in this area.
- 4.2.7. Five anomalies were identified that could correspond to known UKHO recorded wrecks based on their positions; these anomalies are **7480-7484** (**Figure 12**) and the WA ID numbers correspond to the wreck IDs used in the DBA. The resolution of the multibeam

bathymetry data is unable to provide further detail on the wrecks other than their location and approximate dimensions.

- 4.2.8. **7480** is an elongated anomaly measuring approximately 18 x 10 x 3m, lying to the west of an area of rocky outcropping and orientated to 42 degrees. It is at the location of UKHO recorded wreck WA ID 1009 sunk in 2004 but no measurements are recorded in the UKHO record. Anomaly **7481** is a rounded object measuring 32 x 27 x 1.5m located on the break of a slope to the east of a rocky outcropping. It is at the recorded location of UKHO wreck WA ID 1028, a fishing vessel sunk in 1991 with recorded dimensions of 12.5 x 7.5 x 6.9m. The difference in dimensions is probably due to the low resolution of the bathymetry data of such a small wreck.
- 4.2.9. **7482** is an elongated area of raised ground 97 x 25 x 3.5m with an upstanding central object; the anomaly is orientated to 69 degrees. It is at the location of recorded UKHO wreck WA ID 1035, and is probably the *Glitra*, a Norwegian iron steamship sunk in 1916. The UKHO record dimensions are 91 x 12m, very similar to the bathymetry dimensions and a diver description records the wreck being broken up with a single boiler and a donkey boiler and standing to a height of 3.4m. The upstanding central object could be the single boiler described by the diver in 2000. Nothing further can be said about the condition of the wreck and the extent of its collapse.
- 4.2.10. **7483** is an elongated object measuring 30.5 x 8 x 1m and it may be partially buried. It is located in a sandy area surrounded by rocky outcrops and it is orientated to 16 degrees. It is at the recorded location of UKHO wreck WA ID 1004, an E-class submarine sunk in 1917. It is described as partially intact lying on a sandy seabed measuring 20 x 4 x 2m with the bow at a distance of 7-10m away to the north, the stern is buried.
- 4.2.11. **7484** is an elongated object measuring 60 x 12 x 2m located on a slope to the south of an island and to the north of a sandbank; it is orientated to 38 degrees. The anomaly is at the location of UKHO recorded wreck WA ID 1008, the *Jane*, a registered schooner rigged iron steam collier sunk in 1923. Reports differ as to the survival of the wreck with descriptions stating that it is lying on its port side and upside down. There are no recorded dimensions for the wreck apart from a length of 60m which corresponds with the length measured in the bathymetry data.

## 5. CONCLUSIONS

### 5.1. MARITIME ARCHAEOLOGY

- 5.1.1. Although weather conditions prohibited some sites being surveyed and impacted on the quality of the data, on the whole good information and useful insights were obtained for the sites which could be surveyed. The main source of information on these wreck sites is from diver observations but sidescan survey has added to this with quantitative information such as overall wreck dimensions. The surveys were very successful in both very shallow and deeper waters where the sidescan sonar towfish was able to be towed over the wreck area; the water depth which was suitable for survey was constrained by the length of the soft tow cables available.
- 5.1.2. The aim of the geophysical survey was to gather information on known wreck sites in Shetland coastal waters and to inform on the location, identification, extent and survival of these wrecks. The sidescan sonar survey successfully achieved this aim and as well as quantitative measurements it also added many observations and qualitative information on the state of the known wrecks.

- 5.1.3. The two surveys over wooden wrecks, the *Wrangels Palais* and the *Drottningen af Sverige* were not able to identify any anomalies of the actual wrecks themselves. Both wrecks do not actually survive intact but are characterised by the spread of debris from their cargo and armaments. While larger accretions of material and canons can be identified in sidescan sonar data the location of the artefacts at these two wreck sites are mainly in the gullies of rocky outcrops and physically difficult to survey. The four wrecks that were clearly identifiable from sidescan sonar data were the *Gwladmena*, the *Glenisla* and the Motor Torpedo Boats Numbers 626 and 686.
- 5.1.4. The wrecks targeted in this project are located in a variety of environments and water depths; harbour sites were busy and open sea sites were often difficult to survey due to increased exposure to weather. The *Glenisla* in particular had very detailed high quality images from the sidescan sonar data. If a wreck was not able to be identified in the sidescan sonar data this was either due to the condition of the wreck, often with no actual structure surviving, or to the wreck position being based upon a sighting or a named location.
- 5.1.5. Of the three definite wreck anomalies seen in the sidescan data, the *Gwladmena*, the *Glenisla* and Motor Torpedo Boat WA ID 1127, none of them are at their recorded UKHO location. The *Gwladmena* is approximately 60m northeast of its recorded UKHO position, the *Glenisla* is 18m to the east of its recorded UKHO position and the Motor Torpedo Boat is 15m to the southeast of its recorded UKHO position but as it is severely broken up the debris scatter is probably over a larger area.

## 5.2. SUBMERGED PREHISTORY

- 5.2.1. The potential for submerged prehistory in Scotland is well known and documented with research through geophysics and geotechnical investigation highlighted in particular. The emphasis has been on the highest potential surviving in inland areas between the islands such as voes and sheltered bays but from the multibeam bathymetry survey other potential areas have also been suggested.
- 5.2.2. Reassessment of existing BGS boreholes and vibrocores around the coast of Shetland to establish peat deposits and create a deposit model would help to improve the sea-level curve for Shetland and would also improve our knowledge of the early to mid-Holocene environment.
- 5.2.3. Using bathymetry data to help identify potential areas for prehistoric landscapes such as partially infilled palaeochannels is useful as it gives a detailed information and images of the marine topography. One possible suggestion for further work with this technique is to combine multibeam bathymetry offshore with lidar topographical mapping onshore thereby creating a seamless landscape and not one constricted by the current water-level. The bathymetry would need to be integrated with other geophysical and geotechnical data for various sea-level curves to be imaged against the actual terrain. However, this initial assessment of the bathymetry data has highlighted some potential areas for possible further investigation.

## 6. REFERENCES

Bondevik, S., Mangerud, J.S., Dawson, S., Dawson A. and Lohne, Ø. 2005 *Evidence for three North Sea tsunamis at the Shetland Islands between 8000 and 1500 years ago* Quaternary Science Reviews 24: 1757-1775.

*Discovery and Excavation* 2011 Volume 12 Archaeology Scotland: Tisbury.

Johnson, H., Richards, P.C., Long D., and Graham C.C. 1993 *The geology of the northern North Sea* British Geological Survey, United Kingdom Offshore Regional Report HMSO: London.

Long, D., Wickham-Jones, C.R., and Ruckley, N.A., 1986 'A flint artefact from the northern North Sea' in *Studies in the Upper Palaeolithic of Britain and North Western Europe* BAR International Series No. 296 Archaeopress: Oxford.

Maritime Coastguard Agency (MCA) 2011 United Kingdom Civil Hydrography Programme, 2011 Edition.

Melton, N.D, & Nicholson, R.A. 2004 'The Mesolithic in the Northern Isles: the preliminary evaluation of an oyster midden at West Voe, Sumburgh, Shetland, UK.' *Antiquity* Volume 78: 299-301.

Stoker, M.S., Hitchen, K., and Graham, C.C. 1993 *The Geology of the Hebrides and West Shetland shelves, and adjacent deep-water areas*. British Geological Survey, United Kingdom Offshore Regional Report HMSO: London.

Wessex Archaeology 2011 *Shipwreck Heritage of Shetland* Unpublished report ref 53111.02q-7.

**APPENDIX**

<b>WA ID</b>	<b>Name/ Classification</b>	<b>Easting</b>	<b>Northing</b>	<b>Archaeological Discrimination</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Height (m)</b>	<b>Description</b>
7000	Seafloor disturbance	625497	6700996	A2	28.3	16.8	0	Area in soft sediment containing several connecting bright reflectors. Could be partially buried debris.
7001	Dark reflector	625476	6700869	A2	5	12	2.9	Amorphous shaped anomaly with diffuse edges and spread-out shadow. In area of soft sediment near outcropping bedrock.
7002	Dark reflector	603007	6667872	A2	3	0.6	0	Curvilinear dark reflector in area of soft sediment, no shadow visible to indicate height.
7003	Seafloor disturbance	603103	6667954	A2	46.3	11.4	0	Pair of curvilinear bright reflectors, in soft sediment near to wreck. Could be associated, possibly dragging scars from debris.
7004	Wreck	603117	6668052	A1	80.2	17.6	4.2	Data quality is variable but wreck visible. Stern end is at edge of range so height is a minimum. Some structure evident showing boat is intact and is upright. Strong dark reflectors, probably metal. In darker patch of sediment near outcropping bedrock.
7005	Debris	603114	6668079	A1	3.5	0.3	0.1	Long, narrow, dark reflector, probably debris associated with wreck.
7006	Dark reflector	603135	6668126	A2	6.5	0.2	0	Three very small dark reflectors in a linear orientation, small depressions/scour marks around each.
7007	Dark reflector	603103	6668198	A2	8.5	0.5	0.5	Curvilinear narrow dark reflector with obvious shadow.
7008	Dark reflector	603011	6668185	A2	4.6	0.8	0.2	Amorphous shaped dark reflector with diffuse shadow in area of soft sediment.
7009	Dark reflector	603212	6667804	A2	1.7	0.2	0.2	Small, isolated linear anomaly with shadow, possible scour mark at one end.

<b>WA ID</b>	<b>Name/ Classification</b>	<b>Easting</b>	<b>Northing</b>	<b>Archaeological Discrimination</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Height (m)</b>	<b>Description</b>
7010	Debris	603069	6668053	A2	3.4	0.5	0.3	Curvilinear dark reflector that lies in an area of sand ripples near a wreck could be associated debris.
7011	Dark reflector	603141	6667933	A2	1.7	0.5	0	Small dark reflector with scour mark off one end. Wreck in the vicinity, could be associated.
7012	Dark reflector	603117	6667938	A2	0.8	0.5	0.4	Small approx. circular anomaly with shadow, In vicinity of wreck so could be associated.
7013	Dark reflector	603156	6668045	A2	3.4	0.5	0.2	Three small approx. circular anomalies with height, possibly all part of same object but partially buried in area of sand ripples. Could be debris from wreck nearby.
7014	Dark reflector	603168	6667958	A2	4.8	3.5	0.2	Rectangular shaped anomaly in area of sand ripples appears partially buried. Could be debris associated with wreck 3016 but also modern debris in the area.
7015	Dark reflector	603164	6667934	A2	2.9	0.2	0.2	Linear narrow anomaly with shadow, on edge of area of sand ripples, in the vicinity of wreck, probably debris.
7016	Dark reflector	603189	6667923	A2	3.2	0.3	0	Linear anomaly lying across area of sand ripples, possibly debris associated with wreck but also modern debris in the area.
7017	Bright reflector	603132	6668002	U2	0.8	0.7	0	Small approximately oval shaped anomaly, possibly modern debris.
7018	Bright reflector	603152	6667994	U2	1.5	1.7	0	Ring-shaped anomaly, probably modern debris such as a tyre. Near wreck.



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7019	Wreck	603670	6667584	A1	78.57	24.5	7.8	Area of diffuse dark reflectors and a distinct shadow indicating a wreck. Overall shape discernible but no structure seen due to data quality. Standing to considerable height, upright, too distorted to tell if intact. In area of soft sediment.
7020	Debris	603680	6667539	A1	9.9	5.9	0	Diffuse small dark reflectors, at the edge of the shadow of wreck, could be debris. Area of thin narrow dark reflectors grouped together, no distinct shadows visible to assess height.
7021	Dark reflector	603639	6667587	A1	1.7	0.9	0.2	Diffuse amorphous shaped dark reflector, in the vicinity of wreck, could be associated.
7022	Linear	603787	6667729	A2	0.4	19.7	0	Curvilinear anomaly looks like a dragging scar, possible linear short dark reflector within it could be debris, associated with wreck nearby.
7023	Bright reflector	603673	6667645	U2	1.8	1	0	Three ring shaped anomalies, next to wreck, possibly associated but looks like modern debris of tyres. Two similar anomalies next to it.
7024	Dark reflector	603730	6667467	A2	4.2	0.5	0	Small, short, straight, dark reflector.
7025	Dark reflector	603642	6667290	A2	10.3	11.7	0	Approx. circular diffuse anomaly connecting to a curvilinear anomaly by thin faint dark reflector. Possibly debris, no height.
7026	Linear	603704	6667715	A2	26.9	1.5	0	Linear dark reflector, probably a dragging scar although an associated object cannot be identified. Two dark reflectors nearby.
7027	Dark reflector	603685	6667712	A2	2.5	0	0.3	Narrow linear anomaly with short shadow.
7028	Dark reflector	603677	6667683	A2	5.4	0.2	0.1	Linear narrow anomaly with short shadow. Possibly debris and possibly associated with other debris nearby.



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7029	Bright reflector	603607	6667271	U2	1.2	1.3	0	Two ring shaped anomalies, similar anomaly next to it. Modern debris, a tyre.
7030	Debris	603900	6667485	A2	7.5	13.7	0.6	At beginning of line, numerous small dark reflectors grouped together with one amorphous shaped dark reflector next to it. The shadow of this single reflector is used to calculate height.
7031	Dark reflector	603836	6667603	A2	2.6	0.2	0.3	Short, straight, dark reflector with shadow.
7032	Bright reflector	603433	6667846	U2	2	1	0	Weak ring shaped anomaly, probably modern debris - tyre.
7033	Seafloor disturbance	603197	6657008	A2	19	0.3	34.1	Difficult to see as at beginning of survey line, but some linear dark reflectors could indicate buried debris or could be bedrock.
7034	Seafloor disturbance	603201	6657171	A2	28.5	0	21.1	Area containing curvilinear narrow dark reflectors, in area of soft sediment, difficult to distinguish any structure.
7035	Dark reflector	603853	6669373	A2	1	0.2	0.3	Long narrow dark reflector with shadow, near area of boulders.
7036	Dark reflector	603891	6669337	U2	0.2	0.1	0.4	Small anomaly with long shadow, near modern debris - tyres etc.
7037	Bright reflector	603889	6669347	U2	1	1.2	0	Ring shaped anomaly, tyre - modern debris.
7038	Dark reflector	603950	6669340	A2	2.2	0.8	0.7	Small, isolated anomaly with long shadow. Modern debris in the area so could be more of the same.
7039	Dark reflector	603940	6669315	A2	0.1	0.5	0.6	Small, approx. circular anomaly with straight edged shadow.

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7040	Dark reflector	603915	6669336	A2	4.4	0.2	0.3	Short, fat anomaly with irregular shadow, modern debris in the area, could be more of the same.
7041	Dark reflector	603865	6669271	A2	3.2	0.2	0.2	Small, fat, curvilinear anomaly with shadow. Near modern debris so could also be modern debris.
7042	Dark reflector	603921	6669260	U2	2.3	1	0.3	Ring shaped anomaly with shadow, modern debris, possibly tyre.
7043	Bright reflector	603868	6669270	U2	0.5	1.1	0	Ring shaped anomaly, modern debris - tyre
7044	Dark reflector	603817	6669328	U2	3.7	0.2	0.2	Curvilinear anomaly, possibly modern debris and ring shaped anomaly, possibly modern debris.
7045	Bright reflector	603726	6669177	U2	4.8	1	0	Ring shaped anomaly, modern debris - tyre.
7046	Debris field	603660	6669117	U2	2.1	14.7	0.6	Area containing at least five anomalies - four ring shaped bright reflectors and one small approx. circular dark reflector with height. All probably modern debris.
7047	Bright reflector	603956	6669449	U2	2	0.9	0	Two ring shaped anomalies, modern debris - tyres. At beginning of survey line.
7048	Dark reflector	603907	6669434	A2	0.8	0.2	0.3	Small approx. square anomaly with shadow.
7049	Bright reflector	603906	6669429	A2	2.2	1.4	0	Irregular shaped linear, appears coiled. Probably modern debris.
7050	Bright reflector	603965	6669469	U2	1.1	1.1	0	Ring shaped anomaly, tyre - modern debris.
7051	Bright reflector	603955	6669452	U2	1	0.8	0	Ring shaped anomaly, tyre - modern debris.

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7052	Dark reflector	603979	6669446	A2	5.1	0.1	0.1	Narrow long curvilinear anomaly with shadow, piece of modern debris.
7053	Bright reflector	603971	6669441	U2	0.4	1.1	0	Ring shaped anomaly, tyre - modern debris.
7054	Bright reflector	603969	6669440	U2	0.4	0.6	0	Ring shaped anomaly, tyre - modern debris.
7055	Bright reflector	603910	6669425	U2	0.5	1.3	0	Ring shaped anomaly, tyre - modern debris.
7056	Bright reflector	603815	6669317	U2	3.9	0.8	0.1	Two ring shaped anomalies - tyres connected by narrow linear dark reflector - piece of rope.
7057	Bright reflector	603658	6669081	U2	3.1	0.9	0	Weak ring shaped anomaly, tyre - modern debris.
7058	Bright reflector	603658	6669081	U2	3.3	1	0	Ring shaped anomaly, tyre - modern debris.
7059	Bright reflector	603676	6669120	U2	2.9	0.9	0	Ring shaped anomaly, tyre - modern debris.
7060	Bright reflector	603693	6669117	U2	4.7	0.8	0	Ring shaped anomaly, tyre - modern debris.
7061	Bright reflector	603723	6669145	U2	1.8	1.3	0	Ring shaped anomaly, modern debris - tyre
7062	Bright reflector	603754	6669105	U2	10.3	1.3	0	Ring shaped anomaly, modern debris - tyre
7063	Bright reflector	603748	6669115	U2	3.3	1	0	Ring shaped anomaly, modern debris - tyre
7064	Bright reflector	603749	6669139	U2	1	1.2	0	Ring shaped anomaly, modern debris - tyre
7065	Bright reflector	603757	6669145	U2	1.2	1.2	0	Ring shaped anomaly, modern debris - tyre
7066	Bright reflector	603763	6669150	U2	4.3	1.1	0	Ring shaped anomaly, modern debris - tyre

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7067	Bright reflector	603769	6669163	U2	1.5	1.3	0	Ring shaped anomaly, modern debris - tyre
7068	Bright reflector	603771	6669166	U2	9.5	0.8	0	Ring shaped anomaly, modern debris - tyre
7069	Bright reflector	603752	6669170	U2	1	1.1	0	Ring shaped anomaly, modern debris - tyre
7070	Bright reflector	603750	6669172	U2	0.4	0.9	0	Ring shaped anomaly, modern debris - tyre
7071	Bright reflector	603753	6669175	U2	0.9	0.7	0	Ring shaped anomaly, modern debris - tyre
7072	Bright reflector	603748	6669209	U2	18.7	1	0	Ring shaped anomaly, modern debris - tyre
7073	Bright reflector	603860	6669242	U2	9.3	1.3	0	Ring shaped anomaly, modern debris - tyre
7074	Bright reflector	603892	6669302	U2	1.3	1.3	0	Ring shaped anomaly, modern debris - tyre
7075	Bright reflector	603949	6669410	U2	1.4	0.8	0	Ring shaped anomaly, modern debris - tyre
7076	Bright reflector	603982	6669379	U2	1.2	1.2	0	Ring shaped anomaly, modern debris - tyre
7077	Bright reflector	603994	6669391	U2	0.1	0.9	0	Ring shaped anomaly, modern debris - tyre
7078	Bright reflector	603984	6669418	U2	1.6	0.5	0.2	Ring shaped anomaly, modern debris - tyre
7079	Dark reflector	603986	6669408	U2	0.2	1.4	0	Ring shaped anomaly with bright reflector ring shaped anomaly underneath - modern debris.
7080	Bright reflector	603840	6669209	U2	1.1	1.3	0	Ring shaped anomaly, modern debris - tyre
7081	Bright reflector	603830	6669183	U2	2.7	1	0	Ring shaped anomaly, modern debris - tyre

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7082	Debris field	603738	6669139	U2	10	11.6	0.1	Area containing several ring shaped anomalies - probably modern debris of tyres. Many in the area.
7083	Bright reflector	603774	6669115	U2	2	0.7	0	Ring shaped anomaly, modern debris - tyre
7084	Bright reflector	603765	6669115	U2	0.7	0.9	0	Ring shaped anomaly, modern debris - tyre
7085	Bright reflector	603771	6669094	U2	0.5	0.9	0	Ring shaped anomaly, modern debris - tyre
7086	Bright reflector	603753	6669099	U2	0.5	2.3	0	Ring shaped anomaly, modern debris - tyre
7087	Bright reflector	603753	6669090	U2	0.3	1	0	Ring shaped anomaly, modern debris - tyre
7088	Bright reflector	603740	6669089	U2	0.6	1.3	0	Ring shaped anomaly, modern debris - tyre
7089	Bright reflector	603746	6669077	U2	2	1.1	0	Ring shaped anomaly, modern debris - tyre
7090	Bright reflector	603730	6669085	U2	0.3	1	0	Ring shaped anomaly, modern debris - tyre
7091	Bright reflector	603736	6669076	U2	0.6	1.1	0	Ring shaped anomaly, modern debris - tyre
7092	Bright reflector	603676	6669078	U2	0.3	1	0	Ring shaped anomaly, modern debris - tyre
7093	Dark reflector	603665	6669079	U2	2.4	0.6	0.1	Rectangular shaped anomaly with shadow, probably a fishbox.
7094	Dark reflector	603664	6669081	U2	2.3	0.7	0.2	Rectangular shaped anomaly with shadow, probably a fishbox.
7095	Bright reflector	603662	6668986	U2	1.4	1	0	Ring shaped anomaly, modern debris - tyre
7096	Bright reflector	603645	6668958	U2	2.6	1.4	0	Ring shaped anomaly, modern debris - tyre

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7097	Bright reflector	603635	6668952	U2	0.7	2.9	0	Possibly a group of ring shaped anomalies, modern debris - tyres
7098	Dark reflector	602579	6670803	A2	0.5	0.3	0.3	Short, linear anomaly with shadow.
7099	Dark reflector	602584	6670826	A2	1.1	0.3	0.3	Linear anomaly with shadow.
7100	Dark reflector	602588	6670626	U2	0.9	0.8	0.2	Ring shaped anomaly, modern debris probably a tyre.
7101	Dark reflector	602590	6670623	U2	0.1	0.9	0.3	Two short narrow linears with shadow, probably modern debris.
7102	Dark reflector	602592	6670819	A2	0.3	0.7	0.6	Square shaped anomaly with straight edged shadow.
7103	Dark reflector	602592	6670802	A2	1	0.6	0.5	Linear anomaly with shadow.
7104	Dark reflector	602592	6670606	A2	5.1	0.1	0.1	Long thin anomaly with shadow.
7105	Dark reflector	602593	6670822	A2	0.4	0.2	0.2	Strong linear anomaly with shadow.
7106	Dark reflector	602594	6670611	A2	4.3	0.2	0.2	Long, narrow, linear anomaly with shadow.
7107	Dark reflector	602595	6670841	A2	0.1	1.8	0.4	Faint v-shaped linear with round shadow.
7108	Dark reflector	602595	6670616	A2	0.5	0.5	0.4	Pair of small, thin, linear anomalies with shadow.
7109	Dark reflector	602597	6670610	A2	1.2	0.2	0	Narrow linear, probably modern debris.
7110	Bright reflector	602600	6670597	U2	0.4	1	0	Ring shaped anomaly, modern debris probably a tyre.
7111	Bright reflector	602600	6670614	U2	0.9	0.2	0	Ring shaped anomaly, modern debris probably a tyre.
7112	Dark reflector	602613	6670834	A2	0	0.2	0.1	Small, strong amorphous shaped anomaly with shadow.
7113	Dark reflector	602615	6670856	U2	0.4	0.6	0	Ring shaped anomaly, modern debris of a tyre.

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7114	Dark reflector	602617	6670604	A2	4.4	0.7	0.9	Approx. trapezoidal shaped anomaly with long straight edged shadow.
7115	Dark reflector	602617	6670658	U2	1	1	0.1	Stretched ring shaped anomaly, modern debris of a tyre.
7116	Dark reflector	602621	6670564	U2	0.5	0.9	0.3	Ring-shaped anomaly with straight edged shadow, near quayside and lots of modern debris in the area.
7117	Dark reflector	602621	6670566	U2	0.4	0.9	0.3	Ring-shaped anomaly with shadow, probably modern debris as near quayside visible on starboard channel.
7118	Dark reflector	602622	6670601	U2	0.2	2.7	0.2	Parallel linear anomalies with shadow, probably modern debris of a fishbox.
7119	Dark reflector	602622	6670852	A2	0.3	0.1	0.1	Short linear anomaly, probably piece of modern debris.
7120	Dark reflector	602624	6670698	A2	2.5	0.6	0.5	V-shaped object with shadow.
7121	Dark reflector	602625	6670623	A2	0.8	0.3	0.7	Curvilinear string anomaly with triangular shaped shadow, in area of boulders.
7122	Dark reflector	602627	6670632	A2	1.2	1.2	0.3	Strong curvilinear anomaly with shadow not wholly connected. In area of boulders.
7123	Dark reflector	602628	6670609	A2	5.7	0.9	1	Irregular shaped anomaly with hard edge and straight edged shadow.
7124	Dark reflector	602628	6670568	A2	2.9	0.2	0	Linear narrow anomaly with shadow, near quayside and lots of modern debris in the area.
7125	Bright reflector	602629	6670704	U2	0.1	0.9	0	Ring shaped anomaly, modern debris of a tyre.

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7126	Bright reflector	602629	6670676	U2	0.2	0.8	0	Ring shaped anomaly, modern debris of a tyre.
7127	Dark reflector	602633	6670568	U2	0.6	0.8	0.2	Ring shaped anomaly, modern debris probably a tyre.
7128	Dark reflector	602634	6670571	U2	0.5	0.9	0.2	Ring shaped anomaly, modern debris probably a tyre.
7129	Debris field	602634	6670557	A2	6.9	9.9	0	Strong curvilinear dark reflector showing edge of modern quayside construction.
7130	Bright reflector	602635	6670697	U2	0.5	0.8	0	Ring shaped anomaly, modern debris of a tyre.
7131	Dark reflector	602639	6670569	A2	1.5	0.2	0.1	Linear anomaly with shadow, in area of geological debris near quayside.
7132	Dark reflector	602641	6670568	U2	1.4	0.6	0.2	Rectilinear anomaly, modern debris probably a fishbox.
7133	Bright reflector	602642	6670699	U2	0.5	0.5	0	Ring shaped anomaly, modern debris of a tyre.
7134	Dark reflector	602642	6670681	A2	0.9	0.7	0.4	Triangular shaped anomaly with shadow, full height not unknown as goes out of range.
7135	Bright reflector	602644	6670557	U2	0	0.5	0.3	Ring shaped anomaly, modern debris probably a tyre.
7136	Dark reflector	602645	6670582	A2	0.7	0.9	0.5	V-shaped anomaly with shadow, near modern pier.
7137	Dark reflector	602645	6670583	A2	0.5	0.2	0.5	Amorphous shaped anomaly with shadow, near the modern day pier structure visible on starboard channel.
7138	Dark reflector	602645	6670695	A2	0.4	0.9	0	Rectilinear anomaly with shadow going out of range. Probably a fishbox.



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7139	Dark reflector	602646	6670554	U2	0.4	1	0	Ring shaped anomaly, modern debris of a tyre.
7140	Dark reflector	602646	6670551	U2	0.2	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7141	Bright reflector	602647	6670560	U2	0.4	1	0.2	Ring shaped anomaly, modern debris probably a tyre.
7142	Bright reflector	602647	6670556	U2	0.4	1.4	0	Ring shaped anomaly, modern debris probably a tyre.
7143	Bright reflector	602647	6670567	U2	0.1	1.2	0	Ring shaped anomaly, modern debris probably a tyre.
7144	Dark reflector	602648	6670570	U2	0.1	0.8	0.2	Ring shaped anomaly, modern debris of a tyre.
7145	Bright reflector	602648	6670563	U2	0.1	1.4	0	Ring shaped anomaly, modern debris probably a tyre.
7146	Bright reflector	602648	6670582	U2	0.2	1.2	0	Ring shaped anomaly, modern debris probably a tyre.
7147	Dark reflector	602650	6670623	A2	0.7	0.2	0.2	Linear anomaly with shadow only coming halfway down it.
7148	Dark reflector	602650	6670767	A2	0.2	0.2	0.3	Diffuse fat linear anomaly with shadow at edge of range.
7149	Bright reflector	602651	6670557	U2	0.2	1	0	Ring shaped anomaly, modern debris probably a tyre.
7150	Bright reflector	602652	6670577	U2	0.1	1.2	0	Ring shaped anomaly, modern debris probably a tyre.
7151	Bright reflector	602652	6670583	U2	0.1	1.4	0.2	Ring shaped anomaly, modern debris probably a tyre.
7152	Dark reflector	602652	6670628	A2	0.3	0.5	0.3	Crescent-shaped anomaly with shadow.

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7153	Bright reflector	602652	6670572	U2	0.1	0.8	0	Ring shaped anomaly, modern debris of a tyre.
7154	Debris field	602653	6670539	A2	2	9.3	0	Area next to quayside containing numerous ring shaped and linear dark reflectors probably showing modern debris such as tyres and fishboxes dumped off the quayside.
7155	Bright reflector	602653	6670571	U2	1.3	0.8	0.2	Ring shaped anomaly, modern debris probably a tyre.
7156	Bright reflector	602653	6670562	U2	0.1	1.1	0	Ring shaped anomaly, modern debris probably a tyre.
7157	Bright reflector	602653	6670565	U2	0.2	1.4	0	Ring shaped anomaly, modern debris probably a tyre.
7158	Bright reflector	602654	6670557	U2	0.1	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7159	Dark reflector	602655	6670570	U2	1.2	0.1	0.9	Linear, narrow anomaly with shadow.
7160	Bright reflector	602656	6670569	U2	0.5	0.9	0	Ring shaped anomaly, modern debris probably a tyre.
7161	Bright reflector	602657	6670779	U2	0.9	1.4	0	Ring shaped anomaly, modern debris of a tyre.
7162	Dark reflector	602657	6670646	A2	1.5	0.5	0.3	Strong linear anomaly with straight-edged shadow. Near modern debris so could be more of the same.
7163	Dark reflector	602657	6670688	A2	0.3	0.5	0.4	Strong anomaly with distinct shadow. Suspect it is a boulder but this has a stronger shadow.
7164	Bright reflector	602657	6670571	U2	0.1	0.9	0.2	Ring shaped anomaly, modern debris probably a tyre.

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7165	Bright reflector	602657	6670560	U2	0.1	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7166	Bright reflector	602657	6670584	U2	0.2	1.3	0	Ring shaped anomaly, modern debris probably a tyre.
7167	Dark reflector	602657	6670575	A2	0.9	0.6	1	L-shaped anomaly with straight-edged shadow. Possibly boulder as other geology in the area appears like this.
7168	Bright reflector	602658	6670542	U2	0.1	1.2	0	Group of four ring shaped anomalies, modern debris probably tyres.
7169	Dark reflector	602662	6670577	A2	0.3	0.8	0.6	Strong approx. circular dark reflector with uneven shadow could be natural as geological debris present in the area.
7170	Dark reflector	602663	6670568	A2	0.2	0.1	0.3	Long thin anomaly with shadow, lots of modern debris in the area and near the quayside, could be more of the same.
7171	Dark reflector	602664	6670652	A2	0.6	0.3	0.5	Strong anomaly with long shadow. Associated with faint linear anomaly.
7172	Bright reflector	602665	6670695	U2	0.3	0.9	0	Ring shaped anomaly, modern debris of a tyre.
7173	Dark reflector	602665	6670557	U2	0.2	0.7	0	Two ring shaped anomalies, modern debris of a tyre.
7174	Bright reflector	602667	6670566	U2	0.2	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7175	Bright reflector	602668	6670565	U2	0.1	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7176	Bright reflector	602673	6670535	U2	0	0.7	0	Ring shaped anomaly, modern debris probably a tyre.

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7177	Dark reflector	602674	6670563	U2	0.9	0.1	0	Linear, thin anomaly, modern debris in the area and ring shaped anomaly, modern debris probably a tyre.
7178	Dark reflector	602674	6670534	U2	0.3	0.8	0	Rectilinear anomaly, probably modern debris of a fishbox.
7179	Dark reflector	602674	6670572	A2	2.6	0.9	0.2	Stretched oblong anomaly with shadow. Probably modern debris.
7180	Dark reflector	602675	6670651	U2	0.4	1.4	0.3	Ring shaped anomaly, modern debris probably a tyre.
7181	Dark reflector	602676	6670555	U2	0.1	0.9	0	Ring shaped anomaly, modern debris of a tyre.
7182	Bright reflector	602676	6670649	U2	0.2	1.5	0	Ring shaped anomaly, modern debris probably a tyre.
7183	Bright reflector	602676	6670566	U2	0.7	0.9	0	Ring shaped anomaly, modern debris of a tyre.
7184	Bright reflector	602677	6670559	U2	0.1	0.6	0.2	Ring shaped anomaly, modern debris probably a tyre.
7185	Bright reflector	602677	6670661	U2	0.2	0.9	0	Ring shaped anomaly, modern debris of a tyre.
7186	Bright reflector	602677	6670600	U2	0.4	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7187	Dark reflector	602677	6670534	U2	0.2	0.4	0	Ring shaped anomaly, modern debris probably a tyre.
7188	Bright reflector	602677	6670556	U2	0.1	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7189	Dark reflector	602677	6670561	A2	0.9	0.1	0	Linear anomaly, lots of modern debris in the area so could also be modern.

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7190	Dark reflector	602678	6670587	A2	0.6	0.2	0.1	Small, curvilinear anomaly, modern debris in area.
7191	Bright reflector	602678	6670564	U2	0.2	0.5	0	Ring shaped anomaly, modern debris probably a tyre.
7192	Bright reflector	602679	6670718	U2	0.5	1	0	Two ring shaped anomalies, modern debris of a tyre.
7193	Dark reflector	602679	6670533	U2	0.2	0.5	0	Ring shaped anomaly, modern debris probably a tyre.
7194	Bright reflector	602679	6670552	U2	0.1	0.8	0	Ring shaped anomaly, modern debris probably a tyre.
7195	Bright reflector	602680	6670601	U2	0.5	1.1	0	Ring shaped anomaly, modern debris of a tyre.
7196	Bright reflector	602680	6670563	U2	0	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7197	Bright reflector	602681	6670570	U2	0.1	1.2	0	Ring shaped anomaly, modern debris probably a tyre.
7198	Bright reflector	602681	6670605	U2	0	0.8	0	Ring shaped anomaly, modern debris probably a tyre.
7199	Bright reflector	602681	6670562	U2	0.2	0.5	0	Ring shaped anomaly, modern debris probably a tyre.
7200	Bright reflector	602682	6670549	U2	0	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7201	Dark reflector	602683	6670608	U2	0.3	1.1	0.1	Ring shaped anomaly, modern debris probably a tyre.
7202	Bright reflector	602683	6670555	U2	0.5	0.4	0	Ring shaped anomaly, modern debris probably a tyre.

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7203	Bright reflector	602683	6670533	U2	0.1	0.5	0	Ring shaped anomaly, modern debris probably a tyre.
7204	Dark reflector	602683	6670571	U2	0.6	0.8	0	Ring shaped anomaly, modern debris probably a tyre.
7205	Dark reflector	602684	6670647	A2	0.1	0.1	0.1	Small strong anomaly with shadow. Possibly associated with 3053 nearby.
7206	Bright reflector	602685	6670667	U2	0.1	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7207	Bright reflector	602685	6670598	U2	0.2	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7208	Bright reflector	602685	6670558	U2	0.1	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7209	Dark reflector	602685	6670533	A2	1.6	1.4	0.1	Curvilinear anomaly with shadow and next to it a broken linear anomaly, probably modern debris.
7210	Dark reflector	602685	6670610	U2	0.8	0.9	0	Ring shaped anomaly, modern debris of a tyre.
7211	Bright reflector	602687	6670561	U2	0.2	1	0	Ring shaped anomaly, modern debris probably a tyre.
7212	Bright reflector	602687	6670552	U2	0.1	0.4	0	Ring shaped anomaly, modern debris probably a tyre.
7213	Bright reflector	602687	6670563	U2	0.1	0.8	0	Ring shaped anomaly, modern debris probably a tyre.
7214	Dark reflector	602687	6670576	U2	0.2	1	0.5	Circular anomaly, hard edge probably from a tyre, modern debris.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7215	Dark reflector	602687	6670590	U2	0.1	1.1	0.4	Circular anomaly, probably modern debris. Could be a tyre but other tyres in the area not tagged.
7216	Dark reflector	602687	6670602	U2	0	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7217	Dark reflector	602687	6670579	U2	0.1	0.8	0.3	Interconnecting linears with shadow, probably fishbox. Bulk of shadow measured, fine linears probably shadow from seaweed?
7218	Dark reflector	602688	6670594	U2	1	0.8	0.3	Interconnecting linear anomalies, probably a fish box.
7219	Dark reflector	602688	6670565	A2	0.1	0.1	0.1	Short, linear anomaly, modern debris in area.
7220	Dark reflector	602689	6670532	A2	0.1	0.4	0.2	Short curvilinear anomaly with shadow, similar to 3572 on opposite channel.
7221	Dark reflector	602689	6670566	U2	1.1	0.4	0.1	Pair of parallel linear anomalies with shadow. Data quality variable, anomaly appears stretched.
7222	Dark reflector	602690	6670598	A2	0.7	0.4	0.2	Amorphous shaped uneven anomaly with shadow could be modern debris.
7223	Dark reflector	602690	6670532	A2	0	0.3	0.3	Short curvilinear anomaly with shadow.
7224	Dark reflector	602690	6670581	U2	0.2	0.5	0.2	Connecting linear anomalies, modern debris in the area, probably a fish box.
7225	Dark reflector	602691	6670613	U2	0.2	0.5	0.4	Ring shaped anomaly, modern debris of a tyre.
7226	Dark reflector	602691	6670576	U2	0.1	1	0.2	Weak interconnecting linears, possibly a fish box.
7227	Bright reflector	602691	6670578	U2	0.1	0.9	0.3	Ring shaped anomaly, modern debris probably a tyre.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7228	Debris field	602692	6670538	U2	3.1	15.9	0.2	Area containing uneven patchy bright reflections with several curvilinear and linear dark reflectors. There is modern debris in the area such as tyres so this could be more of the same.
7229	Dark reflector	602692	6670582	U2	0.1	0.5	0.2	Pair of linear parallel anomalies, could be fishbox, straight edged shadow.
7230	Dark reflector	602692	6670587	A2	0.3	0.5	0.2	Short, fat linear with shadow, in area with modern debris.
7231	Dark reflector	602692	6670648	A2	0.6	0.2	0.2	Curvilinear small anomaly with shadow, geological debris in the area though.
7232	Dark reflector	602693	6670583	U2	0.2	0.1	0.2	Pair of short linear anomalies each with a shadow.
7233	Dark reflector	602693	6670606	A2	0.4	0.1	0.1	Short linear with shadow, modern debris in the area.
7234	Dark reflector	602693	6670580	U2	0.2	0.9	0	Ring shaped anomaly, modern debris probably a tyre.
7235	Dark reflector	602693	6670587	A2	0.2	0.4	0.2	V-shaped anomaly with shadow, modern debris in the area.
7236	Dark reflector	602694	6670582	A2	0.2	0	0.1	Pair of short linear anomalies with shadow. Near modern debris.
7237	Dark reflector	602694	6670596	U2	0.4	1	0.2	Ring shaped anomaly, modern debris of a tyre.
7238	Debris field	602695	6670533	U2	1.5	3.9	0.2	Area containing several ring shaped dark reflectors with shadows and several faint linears, probably dump of modern debris such as tyres.



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7239	Dark reflector	602696	6670567	A2	0.2	0.1	0.2	Pair of parallel linear anomalies with shadow, modern debris in area.
7240	Dark reflector	602696	6670601	A2	0.5	0.5	0.4	L-shaped linear anomaly with uneven shadow, lots of modern debris in the area.
7241	Dark reflector	602696	6670584	U2	0.4	0.6	0	U-shaped linear, no shadow to indicate height, could be a fishbox.
7242	Dark reflector	602696	6670560	U2	0.1	0.7	0.1	Interconnecting linear anomalies, probably a fishbox.
7243	Bright reflector	602696	6670543	U2	0.5	0.7	0	Two ring shaped anomalies, modern debris probably a tyre.
7244	Dark reflector	602696	6670533	U2	0.1	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7245	Dark reflector	602697	6670590	A2	0.2	0.6	0.2	Amorphous shaped anomaly with faint shadow.
7246	Dark reflector	602697	6670554	U2	0.2	0.8	0.1	Interconnecting linear anomalies in box-shape with shadow, probably fish box.
7247	Dark reflector	602697	6670594	A2	0.8	1.1	0.2	Approx. square outline shaped dark reflector, linear striations within it, appears corrugated or fence-like. Probably modern debris.
7248	Dark reflector	602698	6670592	A2	0.3	0.8	0.3	Short parallel pair of linear anomalies with uneven shadow.
7249	Dark reflector	602698	6670587	U2	0	0.9	0.2	Ring shaped anomaly, modern debris probably a tyre.
7250	Bright reflector	602699	6670586	U2	0.4	0.9	0.2	Ring shaped anomaly, modern debris probably a tyre.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7251	Debris field	602699	6670532	U2	0.1	0.3	0.2	Several ring-shape anomalies with height, one measured here for dimensions, all similar in size and characteristics.
7252	Dark reflector	602700	6670569	A2	0.2	0.1	0.2	Very small anomaly with shadow, in area of modern debris.
7253	Dark reflector	602700	6670702	U2	0.3	0.9	0.2	Ring shaped anomaly, modern debris of a tyre.
7254	Dark reflector	602700	6670556	U2	0.1	0.8	0.1	Weak interconnecting linear anomalies, probably a fish box.
7255	Dark reflector	602701	6670590	U2	0.3	1.1	0.1	Pair of weak parallel anomalies with short straight edged shadow, could be a fish box.
7256	Dark reflector	602702	6670590	A2	0.6	1.1	0.1	Square outline of dark reflector with short straight edged shadow, modern debris in the area.
7257	Dark reflector	602702	6670561	A2	0.1	0.2	0.3	Short, fat linear anomaly with straight-edged shadow, lots of modern debris in the area.
7258	Dark reflector	602703	6670589	U2	0.1	0.8	0.2	Ring shaped anomaly, modern debris probably a tyre.
7259	Dark reflector	602703	6670558	A2	0.1	0.4	0.2	Amorphous, possibly ring-shaped, dark reflector with shadow. Modern debris in the area.
7260	Dark reflector	602703	6670555	U2	0.4	0.6	0.1	Connecting linear reflectors with shadow, modern debris in the area, probably a fish box.
7261	Dark reflector	602704	6670561	A2	0.4	0.3	0.3	Intermittent linear anomaly with long uneven shadow. Modern debris in the area.

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7262	Dark reflector	602704	6670555	U2	0.7	0.7	0.1	Pair of parallel anomalies with shadow, probably a fish box, modern debris in the area.
7263	Dark reflector	602704	6670552	U2	0.1	0.8	0.1	Interconnecting linear anomalies with shadow, probable fish box.
7264	Dark reflector	602704	6670595	U2	0.4	1	0.3	L-shaped anomaly with shadow, possible a fish box.
7265	Dark reflector	602705	6670569	A2	0	0.3	0.2	Small, weak anomaly with straight edged shadow. Modern debris in the area.
7266	Bright reflector	602707	6670533	U2	0	0.9	0	Ring shaped anomaly, modern debris probably a tyre.
7267	Dark reflector	602707	6670535	U2	0.4	0.9	0	Ring shaped anomaly, modern debris probably a tyre.
7268	Dark reflector	602707	6670580	U2	0.1	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7269	Dark reflector	602707	6670586	A2	0.2	0.3	0.2	Amorphous shaped anomaly with shadow, not clear if shadow is connecting or not, modern debris in the area.
7270	Dark reflector	602708	6670599	U2	0.2	0.4	0.2	Pair of parallel linear anomalies with shadow, probably a fishbox, modern debris.
7271	Bright reflector	602708	6670570	U2	0.2	0.8	0	Ring shaped anomaly, modern debris of a tyre.
7272	Dark reflector	602709	6670601	A2	0.2	0.2	0.3	Small, approx. circular anomaly with straight edged shadow.
7273	Dark reflector	602710	6670686	U2	0	0.9	0.2	Ring shaped anomaly, modern debris of a tyre.
7274	Dark reflector	602710	6670567	A2	0.1	0.2	0.2	Small linear anomaly with shadow

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7275	Dark reflector	602710	6670565	A2	0.1	0.1	0.1	Weak linear anomaly with shadow.
7276	Dark reflector	602711	6670553	A2	0.4	0.2	0.2	V-shaped anomaly with uneven shadow, modern debris in the area.
7277	Dark reflector	602711	6670569	A2	0.2	0.3	0.3	Weak oval-shaped anomaly with straight edged shadow, modern debris in the area.
7278	Bright reflector	602711	6670595	U2	0.3	1.7	0	Ring shaped anomaly, modern debris of a tyre.
7279	Debris field	602712	6670576	A2	0.1	0.2	0.3	Small area containing several linear and curvilinear dark reflectors, no structure visible and lots of modern debris in the area.
7280	Dark reflector	602712	6670569	A2	0.2	0.3	0.3	Weak, oval shaped anomaly with clear bright shadow, modern debris in the area.
7281	Dark reflector	602712	6670608	A2	0.5	0.5	0.2	V-shaped anomaly with shadow, modern debris in the area.
7282	Dark reflector	602713	6670565	A2	0	0.3	0.3	Small v-shaped anomaly with straight-edged shadow, modern debris in the area.
7283	Dark reflector	602713	6670553	A2	2.9	0.6	0.2	L-shaped linear with uneven shadow, Modern debris in the area.
7284	Debris field	602713	6670512	U2	20	7.5	0	Broad linear dark reflector, edge of quayside.
7285	Dark reflector	602713	6670565	A2	0.2	0.3	0.2	V-shaped anomaly with shadow, modern debris in the area.
7286	Dark reflector	602715	6670591	U2	0.4	0.6	0.1	Linear interconnecting anomalies with shadow. Probably a fish box. Modern debris in the area.
7287	Dark reflector	602716	6670610	A2	0.1	0.9	0.1	Three small strong rounded anomalies in a discrete group, possibly debris.
7288	Bright reflector	602717	6670573	U2	0.3	0.6	0	Ring shaped anomaly, modern debris of a tyre.

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7289	Bright reflector	602718	6670642	U2	1	0.3	0.2	Ring shaped anomaly, modern debris probably a tyre.
7290	Dark reflector	602718	6670529	A2	0.2	0.4	0.3	Curvilinear anomaly with shadow, probably modern debris.
7291	Dark reflector	602719	6670587	U2	0.5	0.8	0	Pair of parallel reflectors, possibly fish box.
7292	Dark reflector	602720	6670523	A2	0	0.4	0.2	Curvilinear anomaly with shadow, probably modern debris.
7293	Bright reflector	602720	6670599	U2	0.1	0.8	0.3	Ring shaped anomaly, modern debris probably a tyre.
7294	Dark reflector	602720	6670518	U2	1.2	0.3	0	Pair of linear dark reflectors, probably modern debris - fishbox.
7295	Bright reflector	602722	6670566	U2	0.4	0.9	0	Ring shaped anomaly, modern debris probably a tyre.
7296	Dark reflector	602722	6670607	A2	0.3	0	0.2	Short linear anomaly with shadow.
7297	Bright reflector	602722	6670602	U2	0.1	0.6	0.4	Ring shaped anomaly, modern debris probably a tyre.
7298	Debris field	602722	6670587	A2	0.3	4.5	0.1	Area containing numerous very small dark reflectors and shadows could represent area of broken up debris/rubbish. Modern debris visible in the vicinity.
7299	Dark reflector	602722	6670562	U2	0.7	1	0	Weak interconnecting linears, probably a fish box.
7300	Dark reflector	602723	6670581	U2	0.8	0.1	0	Narrow, linear anomaly with slight shadow. Modern debris in the area.
7301	Dark reflector	602723	6670626	A2	1.4	0.2	0.1	Linear, narrow anomaly with shadow. Modern debris in the area.

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7302	Dark reflector	602723	6670616	A2	0.1	0.7	0.4	Weak approx. oval shaped anomaly with bright distinct shadow.
7303	Dark reflector	602724	6670622	A2	0.8	0.6	0.1	Two anomalies adjacent that appear raised in relief as very weak in strength, small shadow also visible.
7304	Bright reflector	602725	6670558	U2	0.1	1.1	0	Larger than the other ring shaped anomalies, modern debris.
7305	Bright reflector	602725	6670536	U2	1.1	1	0	Ring shaped anomaly, modern debris probably a tyre.
7306	Dark reflector	602727	6670628	A2	0.9	0.9	0	Tear-drop shaped outline, data is slightly stretched though. Modern debris in the area.
7307	Dark reflector	602727	6670590	A2	1	0.1	0.1	Linear anomaly with shadow, lots of modern debris in the area.
7308	Bright reflector	602730	6670695	U2	0.5	0.8	0	Ring shaped anomaly, modern debris of a tyre.
7309	Dark reflector	602731	6670582	A2	2.4	0.2	0.1	Linear anomaly, modern debris in the area.
7310	Debris field	602731	6670627	A2	0.9	3.8	0.1	Four anomalies, dark reflectors with shadows, one appears box-shaped, the three others are linear.
7311	Bright reflector	602732	6670695	U2	0.3	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7312	Dark reflector	602733	6670593	A2	0.6	0.1	0.1	Narrow linear with shadow, probably modern debris.
7313	Dark reflector	602734	6670566	U2	0.4	0.6	0.1	Pair of parallel linear anomalies with shadow, probably a fish box.

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7314	Bright reflector	602735	6670696	U2	0.8	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7315	Dark reflector	602737	6670584	U2	0.5	0.6	0.1	Interconnecting linear anomalies with shadow, probably a fish box.
7316	Dark reflector	602738	6670593	U2	0.2	0.3	0.1	Ring shaped anomaly, modern debris probably a tyre.
7317	Bright reflector	602738	6670707	U2	0.2	0.7	0	Ring shaped anomaly, modern debris of a tyre.
7318	Dark reflector	602738	6670580	U2	0.1	0.9	0.1	Weak connecting linears in box-like shape with short straight-edged shadow. Possible fish box, many visible in debris field.
7319	Dark reflector	602739	6670557	A2	0.4	0.1	0.2	Linear anomaly with shadow, modern debris in the area.
7320	Dark reflector	602740	6670565	U2	0.2	0.9	0.1	Interconnecting parallel linear anomalies with shadow, probably a fish box.
7321	Dark reflector	602742	6670568	A2	0.2	0.3	0.8	Curvilinear anomaly with large shadow, modern debris in the area but this anomaly is more distinct.
7322	Dark reflector	602742	6670564	U2	0.4	0.6	0.2	Linear interconnecting anomalies, probably a fish box.
7323	Debris field	602743	6670547	U2	2.1	12.8	0.1	Large area containing numerous ring shaped and linear dark and bright reflectors showing spread of modern debris such as tyres and fishboxes.
7324	Debris field	602746	6670571	A2	0.5	4.1	0.1	Area containing linear and curvilinear dark reflectors, no structure visible but probably modern debris, data quality variable on this line.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7325	Dark reflector	602746	6670640	U2	0.4	0.7	0.1	Connecting linears showing a small box-shaped structure, possibly fish box.
7326	Dark reflector	602747	6670580	U2	0.5	0.6	0.2	Ring shaped anomaly, modern debris probably a tyre.
7327	Dark reflector	602747	6670599	A2	1.1	0.1	0.1	Two narrow linears with shadow, probably modern debris. Both same size, same bit of debris broken up.
7328	Dark reflector	602748	6670648	A2	3.8	0.2	0.2	Long narrow linear, in area of rock debris. Possibly modern debris.
7329	Bright reflector	602749	6670721	U2	0.1	1.3	0	Ring shaped anomaly, modern debris of a tyre.
7330	Dark reflector	602749	6670639	A2	1.1	0.2	0.1	Faint linear anomaly with pronounced shadow, in area of boulders.
7331	Debris field	602749	6670569	A2	1.7	14	0	Area containing weak linear and curvilinear dark reflectors, no structure visible but probably modern debris.
7332	Dark reflector	602750	6670587	U2	0.5	0.6	0.1	Pair of parallel linear reflectors with shadow, could be fish box.
7333	Bright reflector	602750	6670722	U2	0.2	1.3	0	Ring shaped anomaly, modern debris of a tyre.
7334	Dark reflector	602751	6670587	U2	0.1	0.6	0.1	Pair of parallel anomalies, probably a fish box, modern debris and wreck debris in the area.
7335	Dark reflector	602751	6670575	A2	2.2	0.2	0.1	Linear narrow anomaly with shadow, modern debris in the area.
7336	Dark reflector	602751	6670592	U2	0.6	0.9	0.1	Rectangular outline of an anomaly with shadow, probably a fish box.



WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7337	Debris field	602752	6670561	A2	0.4	18.9	0.8	Numerous linear and curvilinear anomalies scattered over a wide area. No structure visible. Some linear connecting anomalies probably fish boxes with others most likely modern debris associated with fishing activity. Height is from largest shadow.
7338	Debris field	602754	6670568	A2	2	17.2	0.1	Numerous linear and curvilinear single and interconnecting dark reflectors, some with shadows, largest measured for height. No structure visible, rather lots of small pieces probably modern debris e.g. fish boxes.
7339	Wreck	602754	6670577	A1	23.1	1.1	0.5	Area containing numerous dark reflectors with shadows of varying sizes and shaped. Anomalies dispersed over a wide area. Possibly wreck debris; height is measured from largest shadow of group.
7340	Dark reflector	602755	6670576	U2	0.2	0.9	0.2	Interconnecting linears showing rectangular outline, probably a fish box.
7341	Dark reflector	602755	6670589	A2	0.9	1.7	0.1	Small area containing several linear and curvilinear anomalies, height measured off largest. Could be either modern debris as plenty in the area of debris from nearby wreck.
7342	Debris field	602755	6670641	A2	4.1	4.9	0.1	Area containing linear dark reflectors with shadows. Could be broken up and scattered debris but this is in an area of boulders and smaller rocks therefore difficult to distinguish if it is significantly different to these or not.
7343	Dark reflector	602757	6670589	U2	0.1	0.9	0.1	Pair of parallel linear reflectors with short straight edged shadow, possibly a fish box.
7344	Dark reflector	602757	6670581	U2	0.1	0.8	0	Interconnecting linears in rectangular outline, probably a fish box.

<b>WA ID</b>	<b>Name/ Classification</b>	<b>Easting</b>	<b>Northing</b>	<b>Archaeological Discrimination</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Height (m)</b>	<b>Description</b>
7345	Bright reflector	602758	6670553	U2	0.8	0.8	0	Ring shaped anomaly, modern debris probably a tyre.
7346	Bright reflector	602760	6670577	U2	0.1	0.8	0	Ring shaped anomaly, modern debris probably a tyre.
7347	Dark reflector	602760	6670595	U2	5.4	0.9	0.2	Rectangular outline of an anomaly, probably a fish box.
7348	Debris field	602761	6670782	A2	0.7	6.5	0.3	Area containing five individual anomalies that could be part of one larger anomaly. All are L-shaped dark reflectors, shadow only really visible on largest anomaly. Possibly modern debris.
7349	Debris field	602763	6670565	A2	0.6	19.6	0.2	Wide area containing numerous linear, connecting linear and curvilinear dark reflectors. No structure visible rather it appears to be modern debris such as fish boxes. Wreck adjacent therefore some debris from here probably associated
7350	Dark reflector	602764	6670589	A2	2.1	0.1	0.1	Linear, narrow anomaly with shadow, modern debris in the area.
7351	Bright reflector	602765	6670558	U2	0.8	0.5	0	Two ring shaped anomalies, modern debris probably a tyre.
7352	Bright reflector	602770	6670574	U2	0.1	0.8	0	Ring shaped anomaly, modern debris probably a tyre.
7353	Dark reflector	602770	6670568	U2	0.3	0.9	0	Rectangular shaped dark reflector, probably modern debris of a fishbox.
7354	Debris field	602776	6670564	A2	1.3	11.7	0.3	Area containing several linear and curvilinear anomalies with shadows, largest shadow used to measure height here. Debris possibly associated with wreck but lots modern debris in area too.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7355	Bright reflector	602782	6670621	A2	14.9	0.4	0	Long, curvilinear bright reflector, or could be the shadow of an object. Possible pipeline.
7356	Wreck	602782	6670563	A1	2.7	8.7	0.5	Several curvilinear dark reflectors, largest reflector with shadow measured for height and possibly identified as wreck debris. But no clear structure discernible. Data quality not brilliant. Linear and curvilinear dark reflectors showing outline structure of a wreck. Looks to be lying on its side, possibly starboard side, broken up into two main bits. Some debris lying around, right near the quayside, associated with debris field. Area containing connecting linear and curvilinear anomalies with height. Showing mainly outline structure of a wreck appears to be lying on starboard side broken in two with debris scattered around.
7357	Dark reflector	602782	6670574	U2	0.1	0.7	0.1	Interconnecting weak linear reflectors, probably a fish box.
7358	Debris field	602783	6670634	A2	2.2	6	0.1	Area containing linear and straight edged dark reflectors, look harder edged than others in the area that are geological features but could be more of the same. No structure visible but might be broken up or scattered debris.
7359	Dark reflector	602783	6670577	A2	0.6	0.5	0.1	L-shaped anomaly with shadow could be debris associated with wreck.
7360	Dark reflector	602784	6670588	A2	0.1	0.4	0.4	Pair of small linear anomalies with separate long thin shadows that join at the end.
7361	Dark reflector	602786	6670624	U2	0	0.6	0.1	Ring shaped anomaly, modern debris probably a tyre.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7362	Dark reflector	602786	6670573	A2	0.2	0.4	0	Pair of linear anomalies with shadow, modern debris in the area, but also near to wreck.
7363	Dark reflector	602788	6670586	A2	0.1	0.9	0.4	Pair of short linear dark reflectors with joining shadow.
7364	Dark reflector	602789	6670578	A2	0	0.4	0.2	Pair of linear parallel anomalies with shadow, could be fishbox or could be associated with nearby wreck.
7365	Dark reflector	602790	6670586	A2	0.4	0.7	0.4	Pair of short, linear anomalies with long shadows which merge at the top.
7366	Debris field	602799	6670597	A2	2.4	0.3	0.1	Area containing relatively large linear anomalies, four definitely visible, possibly a further two but these are more diffuse and weaker. Data quality is average. Possibly debris but not sure what it is associated with.
7367	Linear	602803	6670652	U2	0.2	0.5	0	Long curvilinear dark reflector going across both channels, probably modern pipe.
7368	Debris field	602806	6670563	U2	13.8	11.1	0	Numerous broad curvilinear dark reflectors arranged in a curvilinear feature, man-made harbour feature, built up rock debris.
7369	Bright reflector	602717	6670591	U2	0.1	1.3	0	Ring shaped anomaly, modern debris probably a tyre.
7370	Dark reflector	602753	6672024	A2	4.6	1	0.3	Thick, linear anomaly with shadow, modern debris in the area. Small approx. circular anomaly 0.3 x 0.1 x 0.3m with shadow, modern debris in the area.

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7371	Dark reflector	602750	6671995	A2	1.5	0.2	0.3	Group of five anomalies, all dark reflectors except one. Short linear anomaly 1.5 x 0.2 x 0.3 with uneven shadow, Short linear anomaly 0.5 x 0.2 x 0.2 with shadow, modern debris in the area. Curvilinear anomaly 1.3 x 0.2 x 0.3m with shadow and diffuse uneven bright reflections around it. Linear anomaly 1.2 x 0.1 x 0.3m with uneven shadow and disc-shaped bright reflector anomaly 4.9 x 1.2m
7372	Dark reflector	602784	6672005	A2	2.3	1.2	0.3	L-shaped linear with uneven shadow, at edge of range.
7373	Dark reflector	602807	6672008	U2	1.1	0.7	0	Pair of linear reflectors, no shadow to indicate height as anomaly at edge of range. Probably a fish box
7374	Debris field	602793	6671985	A2	4.2	3.5	0.2	Area containing curvilinear bright and dark reflectors jumbled together,
7375	Bright reflector	602707	6671976	A2	0.8	1.5	0	Disc shaped anomaly, isolated, dark reflector not visible but could possibly be a shadow.
7376	Dark reflector	602843	6672025	U2	0.7	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7377	Dark reflector	602927	6672024	A2	10.1	1.6	1.5	V-shaped linear with linears connecting either side, with amorphous shaped anomaly adjoined to it. Some structure discernible, modern debris. Several interconnecting linear anomalies showing some structure of a piece of structural debris, doesn't look like wreck debris.
7378	Dark reflector	602921	6672023	A2	0.8	0.4	0.6	L-shaped anomaly with extended shadow.
7379	Dark reflector	602919	6672026	A2	0.9	0.3	0.1	V-shaped anomaly with narrow shadow.

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7380	Dark reflector	602952	6672018	U2	0.4	0.5	0.1	U-shaped anomaly 0.4 x 0.5 x 0.1m with shadow, probably a fish box, modern debris and pipeline in the area. L-shaped anomaly 0.6 x 1.7 x 0.2m with shadow, modern debris in the area and pipeline.
7381	Linear	602951	6671997	U2	2.3	32.1	0.2	Linear dark reflector crossing both channels with L-shaped linear anomalies crossing perpendicular. Some structure visible of a pipeline with rectangular plates holding it down. Modern utility structure.
7382	Debris field	602969	6671982	U2	8.5	9.8		Several larger curvilinear anomalies with elongated shadows, height measured is a minimum as anomalies are at edge of range, Possibly a quayside structure.
7383	Bright reflector	602960	6671984	U2	0.7	1.1	0	Ring shaped anomaly, modern debris probably a tyre.
7384	Dark reflector	602953	6671995	U2	0.9	0.8	0.1	Two ring shaped anomalies, modern debris probably a tyre.
7385	Dark reflector	602959	6671990	U2	0.3	0.7	0.1	Rectangular shaped outline, probably a fish box.
7386	Dark reflector	602955	6671991	U2	1.1	0.8	0.1	Rectangular shaped outline with shadow, probably a fish box.
7387	Bright reflector	602927	6671992	U2	0.8	0.6	0.1	Four ring shaped anomalies all approximately 1 x 1 x 0.1m, modern debris probably a tyre.
7388	Dark reflector	602959	6671979	A2	1.5	0.2	0.5	Narrow linear with shadow, modern debris in the area.
7389	Dark reflector	602976	6671976	U2	0.8	0.4	0.3	Rectangular shaped outline anomaly with shadow, possibly fish box. Modern debris in the area.

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7390	Dark reflector	602981	6671972	U2	0.9	0.8	0.1	Rectangular outline anomaly with shadow, probably a fish box.
7391	Dark reflector	602978	6671960	A2	2	0.1	0.1	Linear anomaly, modern debris in the area.
7392	Dark reflector	602988	6671957	U2	1.3	3.5	0.2	At least three linear narrow anomalies with shadow in a heap one is probably a fish box, full dimensions unknown as area at beginning of survey line and some is cut off.
7393	Dark reflector	602963	6671974	A2	0.9	0.1	0.4	Weak linear anomaly with shadow. Modern debris in the area.
7394	Dark reflector	602965	6671971	A2	0.7	0.2	0.7	Very weak linear with shadow not connected, modern debris in the area.
7395	Dark reflector	602983	6671953	A2	1.4	0.1	0	Narrow linear anomaly with shadow.
7396	Dark reflector	602981	6671952	A2	1	0.2	0.2	Narrow linear with shadow.
7397	Dark reflector	602985	6671951	U2	3.2	1.4	1.7	Thick v-shaped anomaly with elongated shadow, possibly part of quayside structure.
7398	Dark reflector	602958	6671974	A2	1.2	0.3	0.3	Narrow linear anomaly with shadow. Modern debris in the area.
7399	Dark reflector	602950	6671965	A2	0.8	0.1	1.6	Very weak linear with narrow elongated shadow.
7400	Dark reflector	602955	6671964	A2	1.1	0.1	0	Semi-circular anomaly, in area of bright reflection.
7401	Dark reflector	602875	6671971	U2	0.7	0.5	0.1	Pair of parallel linear anomalies with shadows, could be a fish box.
7402	Dark reflector	602881	6671958	U2	1.1	0.5	0	Rectangular shaped outline with shadow, probably a fish box.
7403	Bright reflector	602970	6671932	U2	0.6	0.7	0	Ring shaped anomaly, modern debris probably a tyre.

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7404	Debris field	602982	6671921	A2	10.6	12.4	1.7	Amorphous shaped dark reflectors in four rows at edge of range standing to significant height, probably a quayside structure.
7405	Bright reflector	602948	6671948	A2	0.6	0.6	0	Amorphous shaped anomaly, tiny linear dark reflector
7406	Bright reflector	602916	6671966	U2	0.7	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7407	Bright reflector	602921	6671962	A2	81	8.3	0	Large approx. rectangular anomaly, possibly a shadow from an anomaly not showing up from this angle.
7408	Debris field	602863	6671989	A2	14.6	4.1	0.1	Area containing small approx. circular dark reflectors with shadows and one long narrow linear among them. Area containing numerous small dark reflectors or varying shapes with some linears. Looks like an area of discrete debris.
7409	Dark reflector	602866	6671981	U2	0.6	0.9	0.1	Rectangular shaped outline with shadow, probably a fish box.
7410	Dark reflector	602884	6671982	U2	10	5	0.1	Area containing short linear parallel reflectors, probably a fish box, L-shaped linear with shadow 1.6 x 0.9 x 0.3m. Rectangular shaped outline probably a fish box 0.7 x 0.6 x 0.1m
7411	Dark reflector	602894	6671986	A2	1.5	1.8	0.2	Approximately square linear outline with shadow, modern debris in the area.
7412	Dark reflector	602852	6671976	A2	1.4	0.6	0.1	At least two isolated u-shaped or parallel linear anomalies with shadow.
7413	Dark reflector	602875	6671967	A2	0.9	0.3	0.2	Triangular shaped anomaly with uneven shadow.



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7414	Dark reflector	602857	6671955	U2	0.9	0.8	0.1	Rectangular shaped outline with shadow, probably a fish box with second fishbox nearby, both approximately 1 x 1 x 0.1m
7415	Dark reflector	602864	6671958	U2	1	0.9	0.1	Interconnecting linears with shadow 1 x 0.9 x 0.1m, probably a fish box. Curvilinear anomaly with shadow 0.4 x 0.2 x 0.2m. Rectangular outline anomaly, probably a fish box 1 x 0.9 x 0.1m. Narrow linear anomaly 1.7 x 0.1 x 0.3m, unable to tell if it has a full length shadow or not.
7416	Debris field	602878	6671959	A2	2.3	1.5	0.2	Discrete area of linear and curvilinear dark reflectors, could be modern debris as some visible in the area.
7417	Dark reflector	602880	6671961	A2	0.8	0.3	0.4	Small approx. circular anomaly with shadow, data has been clipped.
7418	Dark reflector	602943	6671962	A2	0.6	0.1	0.2	Short linear anomaly with shadow.
7419	Dark reflector	602940	6671968	A2	0.9	0.2	0.4	Curvilinear anomaly with bright shadow, on edge of large patch of bright reflection.
7420	Dark reflector	602889	6671959	A2	1.9	0.1	0	Linear anomaly with modern debris in the area.
7421	Dark reflector	602875	6671955	U2	0.4	0.1	0.2	Short linear with shadow, modern debris in the area Rectangular shaped outline with shadow 1.3 x 0.8 x 0.1m, probably a fish box.
7422	Dark reflector	602880	6671953	A2	1.1	0.1	0.2	Linear anomaly with shadow.
7423	Dark reflector	602876	6671951	A2	0.5	0.1	0.2	Small strong reflector with pointed shadow.
7424	Dark reflector	602867	6671945	U2	1	0.5	0.1	Pair of parallel linear anomalies, probably a fish box.
7425	Bright reflector	602852	6671941	U2	0.9	1.7	0	Ring shaped anomaly, modern debris probably a tyre.

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7426	Bright reflector	602850	6671947	U2	0.7	1.5	0	Ring shaped anomaly, modern debris probably a tyre.
7427	Bright reflector	602849	6671950	U2	0.9	1.1	0	Ring shaped anomaly, modern debris probably a tyre.
7428	Bright reflector	602842	6671946	U2	0.9	0.9	0.1	Ring shaped anomaly, modern debris probably a tyre.
7429	Dark reflector	602814	6671969	A2	0.9	0.5	0.4	Diffuse amorphous shaped anomaly with uneven shadow, lots of geological debris in the area.
7430	Dark reflector	602823	6671974	A2	0.9	0.2	0.5	Short weak linear with narrow pointed shadow.
7431	Dark reflector	602811	6671975	A2	0.8	0.2	0.5	Strong amorphous shaped anomaly with pointed shadow different to other rock debris in the area.
7432	Dark reflector	602789	6671936	U2	1	0.7	0.2	Rectangular outline anomaly with shadow, probably a fish box.
7433	Debris field	602796	6671949	A2	6.4	2.7	0.1	Area contains a strong u-shaped anomaly and several various anomalies, the other most prominent being an amorphous shaped bright reflector or possibly shadow. Modern debris in the area.
7434	Dark reflector	602813	6671952	A2	0.6	0.2	0.3	Strong linear anomaly with shadow, in darker patch, associated with 3300, modern debris in the area. Diffuse angular anomaly with shadow 0.4 x 0.4 x 0.1m, modern debris in the area.
7435	Dark reflector	602814	6671937	A2	0.6	0.1	0.4	Short strong reflector with shadow, modern debris and geological debris in the area.
7436	Dark reflector	602825	6671931	A2	1.3	0.1	0.1	Narrow L-shaped linear with shadow, adjacent to 3297. Diffuse approx. circular anomaly 1.2 x 0.8 x 0.2 with shadow, could be boulder.

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7437	Dark reflector	602787	6671919	U2	0.9	0.8	0.1	Rectangular outline with shadow, probably a fish box.
7438	Dark reflector	602838	6671934	A2	1.1	0.2	0.4	Approx. oval shaped anomaly with shadow, modern debris in the area.
7439	Dark reflector	602806	6671915	U2	0.9	0.9	0.2	Interconnecting linears with shadow. Probably a fish box. Data clipped.
7440	Dark reflector	602828	6671902	U2	0.6	0.9	0.1	Pair of parallel linears with shadow, possibly a fish box.
7441	Dark reflector	602756	6671860	A2	0.6	0.2	0.3	Short linear dark reflector with shadow. Data has been clipped.
7442	Dark reflector	602875	6671916	U2	0.9	0.8	0.1	Interconnecting linears with a shadow, probably a fish box.
7443	Dark reflector	602887	6671925	A2	1	0.2	0.2	Curvilinear anomaly with approx. circular shadow.
7444	Dark reflector	602892	6671929	A2	5.2	0.1	0.1	Weak linear with uneven shadow, modern debris in the area.
7445	Dark reflector	602923	6671935	A2	1	0.2	0.4	Linear anomaly with straight edged shadow.
7446	Dark reflector	602940	6671927	A2	1.7	0.4	0.4	Linear anomaly with shadow, at edge of range.
7447	Bright reflector	602938	6671915	U2	0.4	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7448	Dark reflector	602906	6671906	A2	2.6	0.2	0.5	Narrow linear anomaly with rounded shadow.
7449	Bright reflector	602908	6671908	A2	1	0.8	0	Approx. square shaped anomaly, possibly shadow.
7450	Dark reflector	602913	6671910	A2	1.1	0.6	0.4	Amorphous shaped anomaly with shadow. Data has been clipped.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7451	Dark reflector	602907	6671883	A2	0.5	0.2	0.3	Pointed anomaly with shadow, near seafloor disturbance.
7452	Dark reflector	602923	6671899	U2	0.9	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7453	Dark reflector	602917	6671893	U2	0.7	0.8	0.1	Ring shaped anomaly, modern debris probably a tyre.
7454	Bright reflector	602927	6671892	U2	0.7	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7455	Bright reflector	602934	6671896	U2	0.5	0.5	0	Ring shaped anomaly, modern debris probably a tyre.
7456	Dark reflector	602952	6671900	U2	0.5	1.1	0.3	Ring shaped anomaly, modern debris probably a tyre.
7457	Bright reflector	602935	6671848	U2	0.7	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7458	Dark reflector	602970	6671838	U2	0.9	0.9	0.4	Ring shaped anomaly, modern debris probably a tyre.
7459	Bright reflector	602963	6671844	U2	0.9	0.9	0	Ring shaped anomaly, modern debris probably a tyre.
7460	Bright reflector	602966	6671846	U2	0.6	0.7	0	Ring shaped anomaly, modern debris probably a tyre.
7461	Dark reflector	602972	6671845	A2	2.4	0.4	0.2	Fat linear anomaly with shadow, data has been clipped. Modern debris in the area.
7462	Debris field	602981	6671836	A2	12.4	18.2	0.3	Area containing large quantity of ring shaped anomalies, mostly dark reflectors indicating hard edged object but on opposite channel a similar feature is bright reflector. Probably modern debris.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7463	Bright reflector	602977	6671865	U2	0.8	1	0	Area with at least four pieces of debris. Ring shaped anomaly 0.8 x 1, modern debris probably a tyre. Amorphous shaped anomaly with curious shadow 0.8 x 0.8 x 0.4, data quality bad as data has been clipped. Clipped data so barely visible linear anomaly with elongated shadow 2.3 x 1.7 x 2.9, possibly part of quayside structure.
7464	Dark reflector	602859	6671899	A2	1.9	0.5	0.2	Two small anomalies with straight edged shadows, adjacent to a small linear anomaly with shadow
7465	Dark reflector	602806	6671868	U2	0.9	1	0.2	Ring shaped anomaly, modern debris probably a tyre.
7466	Dark reflector	602823	6671888	U2	1	0.6	0.2	Pair of parallel linear anomalies with shadow. Possibly a fish box.
7467	Bright reflector	602816	6671875	U2	1.1	1.1	0	Ring shaped anomaly, modern debris probably a tyre.
7468	Seafloor disturbance	602908	6671890	U2	3	22.5	0	Five approx. circular mounds in linear alignment, data have been clipped. No structure visible, too regular to be geological/natural.
7469	Bright reflector	602810	6671848	A2	1	2.9	0	Approx. disc shaped anomaly, could be shadow from a dark reflector but no anomaly visible from this angle. Data has been clipped.
7470	Dark reflector	602809	6671843	A2	1.2	0.2	0.1	Short, fat linear anomaly with uneven shadow.
7471	Dark reflector	602822	6671860	U2	0.8	0.9	0.3	Ring shaped anomaly, modern debris probably a tyre.
7472	Dark reflector	602812	6671856	U2	1.1	0.9	0	Ring shaped anomaly, modern debris probably a tyre.

WA ID	Name/ Classification	Easting	Northing	Archaeological Discrimination	Length (m)	Width (m)	Height (m)	Description
7473	Dark reflector	602834	6671859	U2	1.1	1	0.2	Ring shaped anomaly, modern debris probably a tyre.
7474	Dark reflector	602849	6671859	A2	0.8	0.3	0.3	Thick, curvilinear anomaly with shadow.
7475	Dark reflector	602873	6671841	A2	1.9	0.9	0.3	Weak triangular anomaly with clearly defined triangular shadow.
7476	Dark reflector	602822	6671841	U2	0.5	0.6	0	Ring shaped anomaly, modern debris probably a tyre.
7477	Dark reflector	602824	6671834	A2	0.6	0.1	0.1	Small amorphous anomaly with shadow.
7478	Dark reflector	602822	6671835	A2	3.2	0.7	0.1	Interconnecting linears with shadow, item of debris.
7479	Dark reflector	602864	6671969	U2	1.1	0.9	0.1	Rectangular shaped outline anomaly with shadow, probably a fish box.
7480	Wreck	589180	6721977	A1	18.1	9.7	3	Elongated anomaly lying to the West of an area of rocky outcropping. Orientated to 42 degrees.
7481	Wreck	575252	6694598	A1	32	26.9	1.6	Rounded object located on the break of a slope to the East of a rocky outcropping.
7482	Wreck	565607	6687380	A1	96.8	25.1	3.5	Elongated area of raised ground with upstanding central object. Orientated to 69 degrees.
7483	Wreck	620022	6735487	A1	30.5	7.9	0.8	Elongated object may be partially buried. Located in a sandy area surrounded by rocky outcroppings. Orientated to 16 degrees.
7484	Wreck	612463	6724569	A1	60.2	12.4	2	Elongated object located on slope to the South of an island and North of a sandbank. Orientated to 38 degrees.

1. Co-ordinates are in WGS 1984, UTM Zone 30N
2. Positional accuracy estimated  $\pm 10\text{m}$