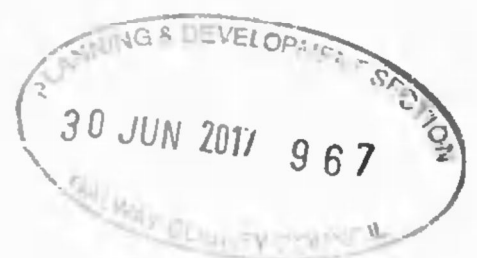


Appendix 10A

Archaeological Marine Survey Report and Data

APPENDIX D

MARINE ARCHAEOLOGY ADDITIONAL INFORMATION



ANOMALY ID	Longitude (W)	Latitude (N)	IGR - Eastings	IGR - Northings
S1	9°34.3807	53°15.6605	095044	224558
S2	9°34.3586	53°15.7449	095072	224715
S3	9°34.4189	53°15.7621	095005	224748
S4	9°34.3209	53°15.7287	095113	224683
S5	9°34.3883	53°15.8914	095045	224987
S6	9°34.3979	53°15.9708	095037	225134
S7	9°34.3244	53°16.5006	095141	226115
S8	9°34.3354	53°16.4022	095124	225933
S9	9°34.3607	53°16.1155	095085	225402
S10	9°34.2979	53°15.8131	095142	224840
S11	9°34.2995	53°15.7536	095138	224729
S12	9°34.1029	53°16.6015	095391	226297
S13	9°34.0062	53°16.5593	095497	226216

Table D1: Side Scan Anomaly list interpreted from the 500 kHz side-scan sonar survey of the proposed Rossaveel harbour development.

Note: Latitude - Longitude pairs are given in decimal degrees and Irish Grid references are references to GPS Signal WGS 84 datum (See Figure 12.3). Side Scan Sonar anomalies listed above not shown in Figure 12.3 are outside of area shown in map.

ANOMALY ID	Longitude (W)	Latitude (N)	IGR - Eastings	IGR - Northings
M1	9°34.0877	53°15.4285	095360	224121
M2	9°34.1772	53°15.4402	095261	224145
M3	9°34.0827	53°15.4848	095368	224225
M4	9°34.1202	53°15.7360	095337	224692
M5	9°34.2865	53°15.7367	095152	224697
M6	9°34.2722	53°15.6615	095164	224558
M7	9°34.2529	53°16.0539	095202	225285
M8	9°34.1312	53°16.1329	095340	225428
M9	9°34.2892	53°16.2209	095168	225595
M10	9°34.2334	53°16.2804	095233	225704
M11	9°34.2012	53°16.2209	095266	225593
M12	9°34.1389	53°16.2104	095335	225572
M13	9°33.9537	53°16.2402	095542	225623
M14	9°33.9227	53°16.2959	095579	225726
M15	9°34.3202	53°16.3102	095138	225762

Table D2: Co-ordinates and ID-tags for the anomalies interpreted from the 2-d contour plots.

Note: Latitude - Longitude pairs are given in decimal degrees and Irish Grid references are references to GPS Signal WGS 84 datum (See Figure 12.2). Magnetic anomalies listed above not shown in Figure 12.2 are outside of area shown in map.

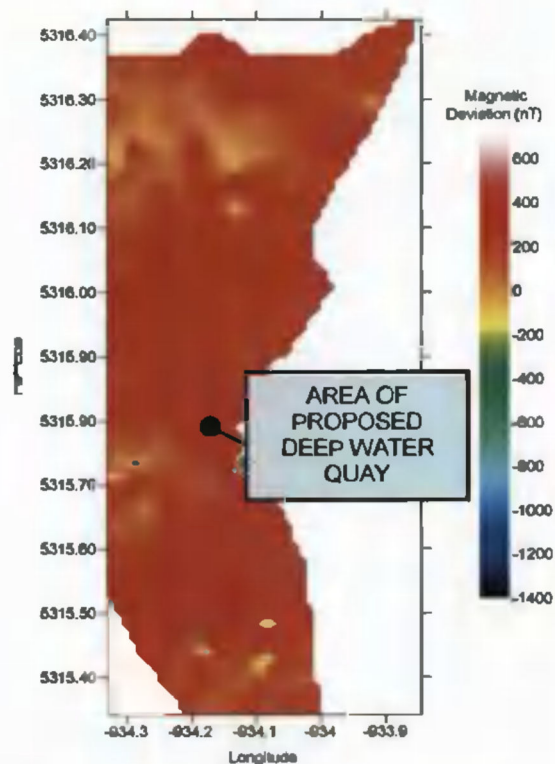


Figure D1: 2-dimensional contour plot of magnetic deviation for the survey grid plotted from -1400 to +700 nT.

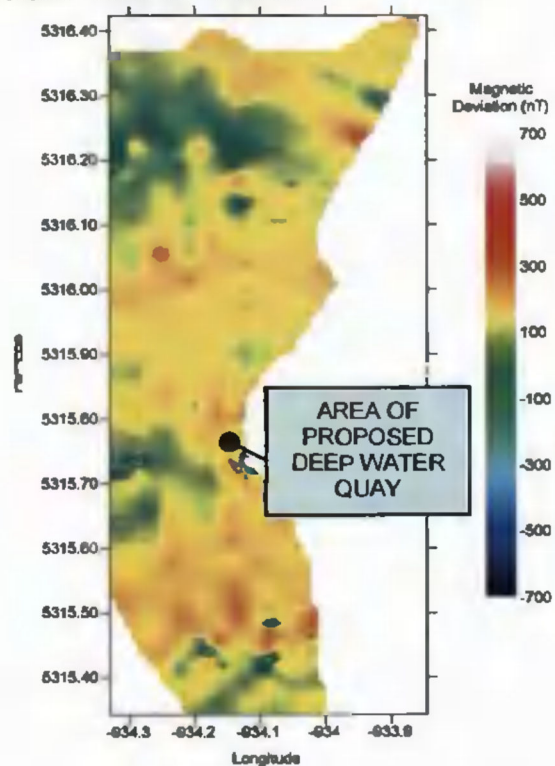
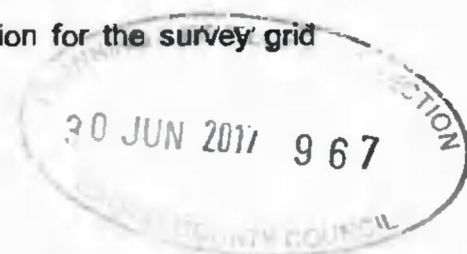


Figure D2: 2-dimensional contour plot of magnetic deviation for the survey grid plotted from -700 to +700 nT.



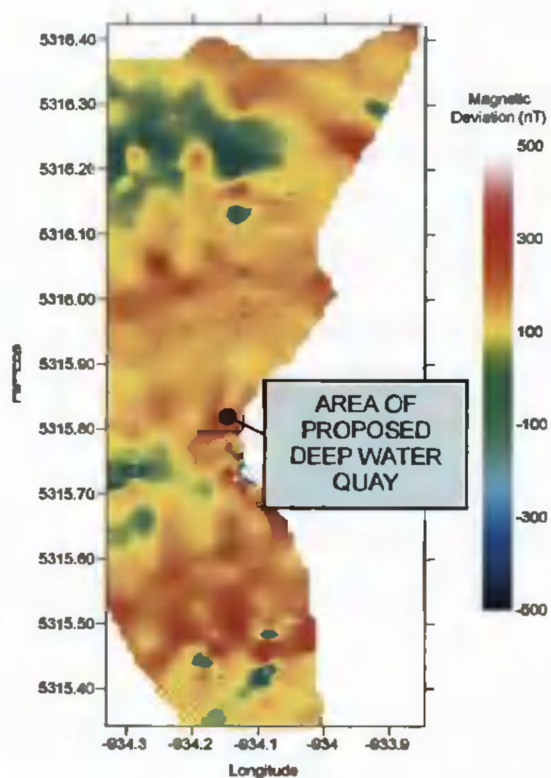


Figure D3: 2-dimensional contour plot of magnetic deviation for the survey grid plotted from -500 to +500 nT.

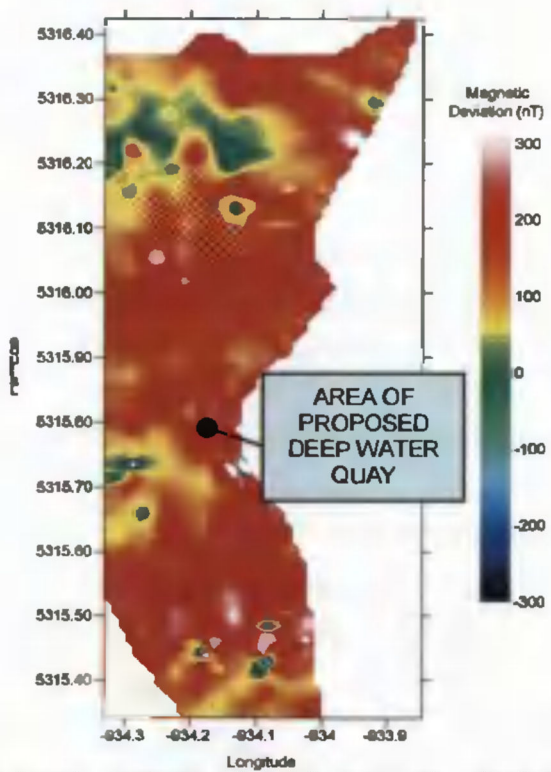


Figure D4: 2-dimensional contour plot of magnetic deviation for the survey grid plotted from -300 to +300 nT.

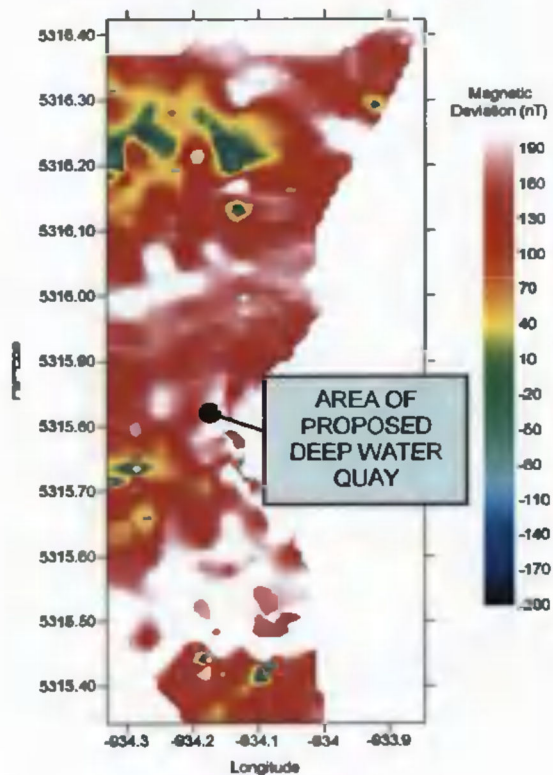
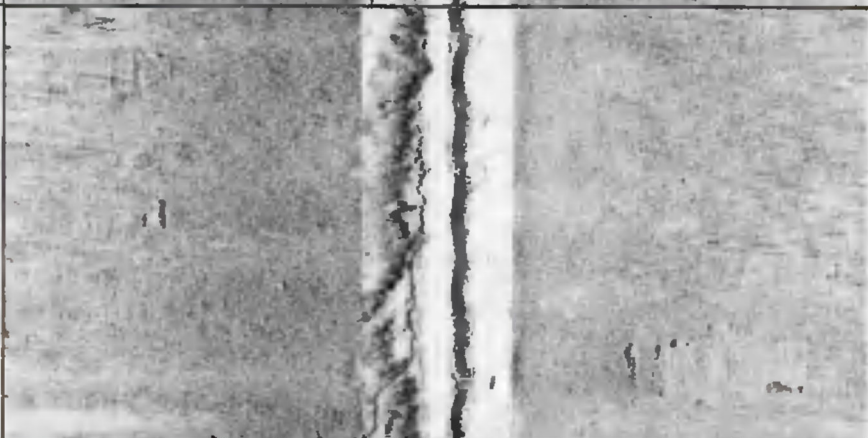
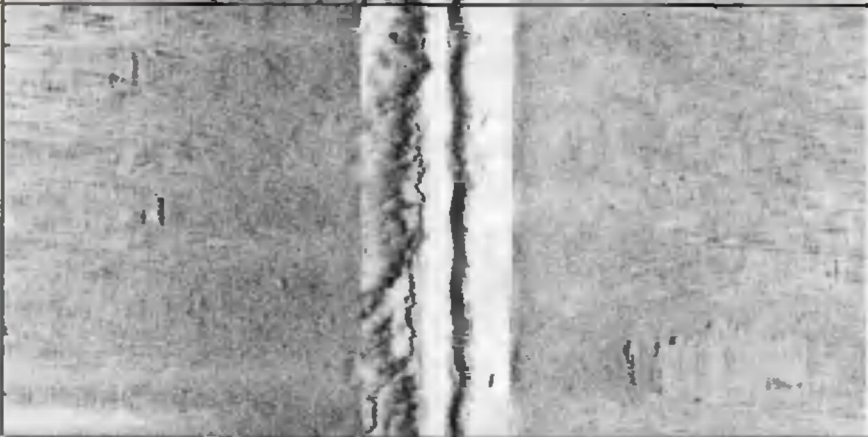
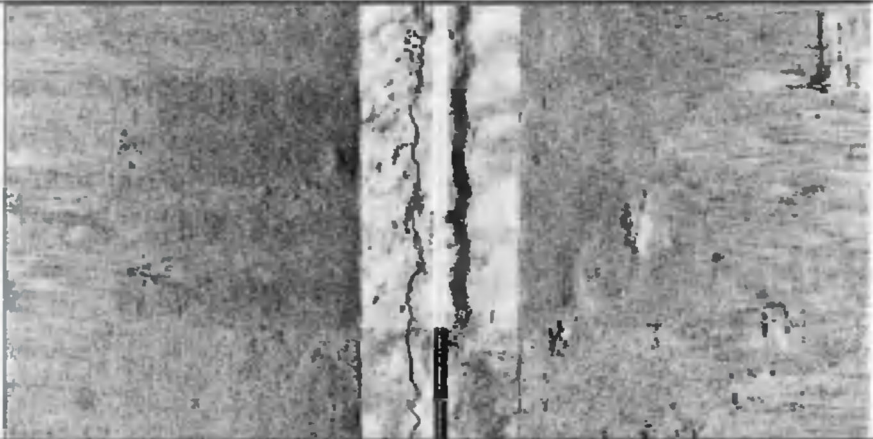
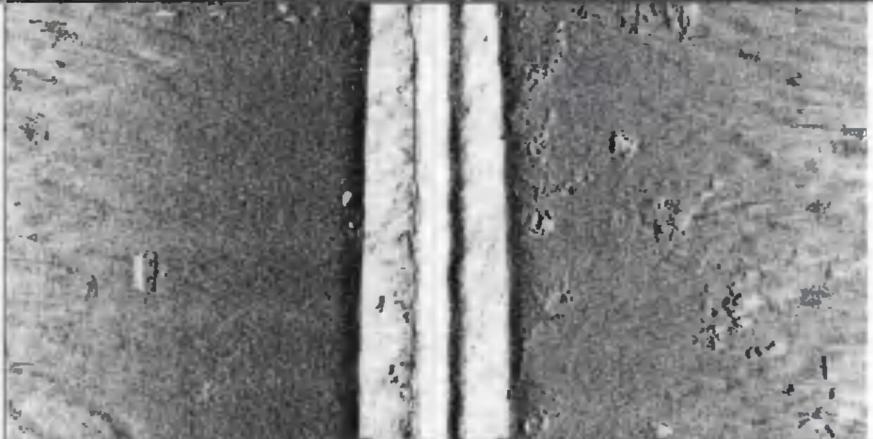
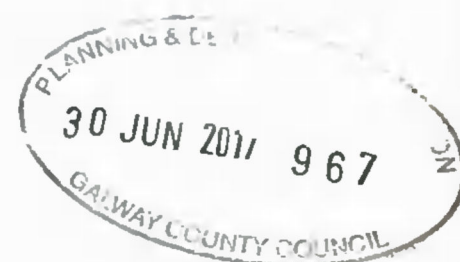


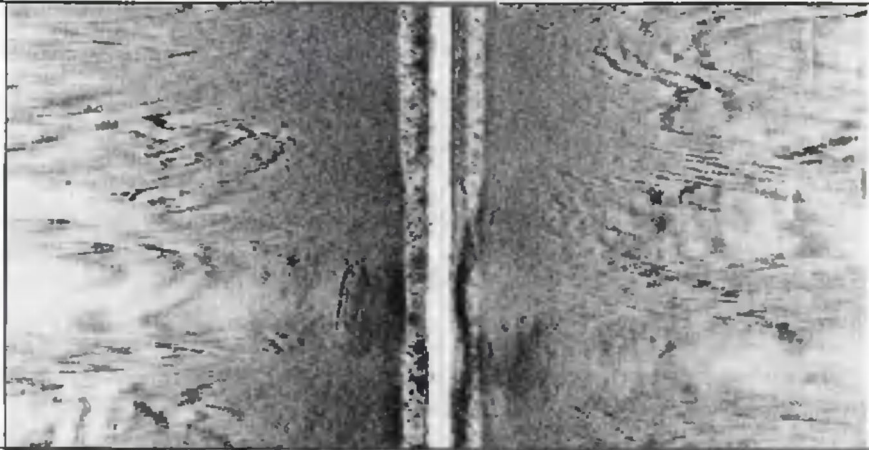
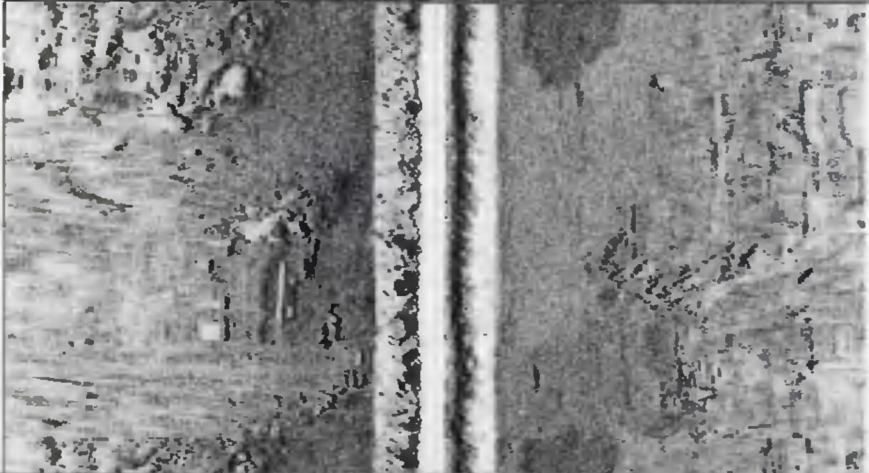
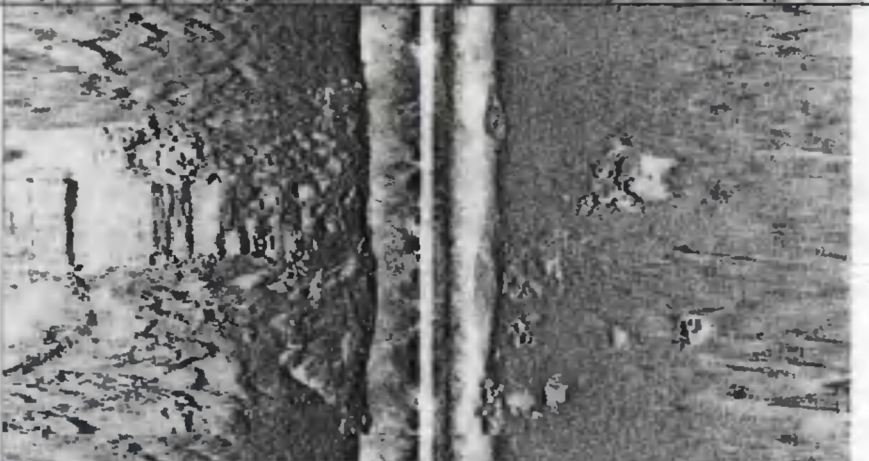
Figure D5: 2-dimensional contour plot of magnetic deviation for the survey grid plotted from -200 to +200 nT.

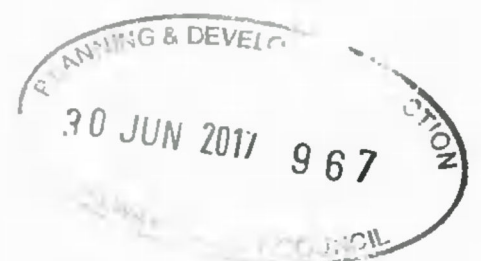
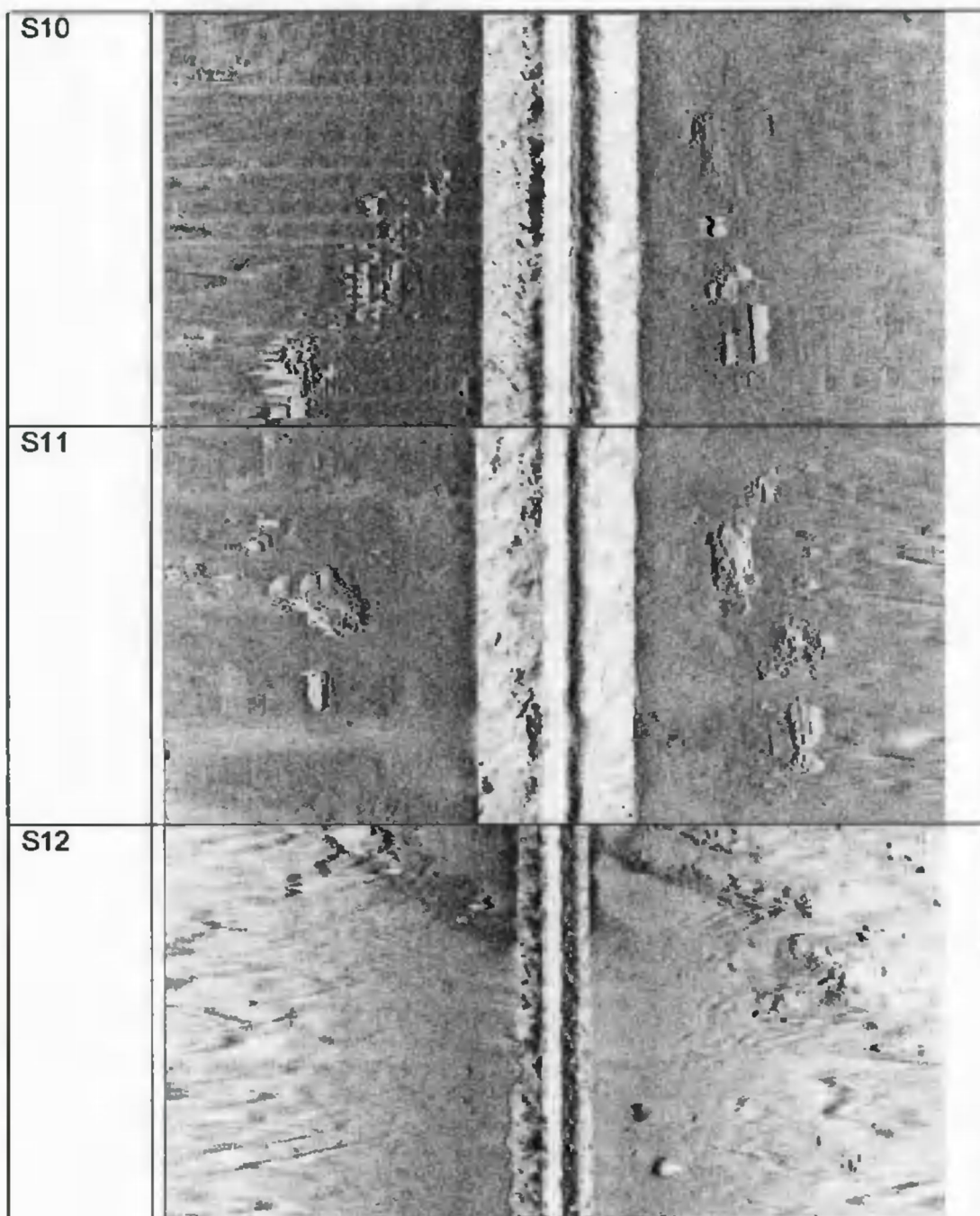


ID	Type Image
S1	 Microscopic image S1 shows a central vertical crack in a material. The crack is dark and irregular, running from the top to the bottom of the frame. The material on either side of the crack has a grainy, textured appearance.
S2	 Microscopic image S2 shows a central vertical crack in a material. The crack is dark and irregular, running from the top to the bottom of the frame. The material on either side of the crack has a grainy, textured appearance.
S3	 Microscopic image S3 shows a central vertical crack in a material. The crack is dark and irregular, running from the top to the bottom of the frame. The material on either side of the crack has a grainy, textured appearance.

S4	
S5	
S6	



S7	
S8	
S9	



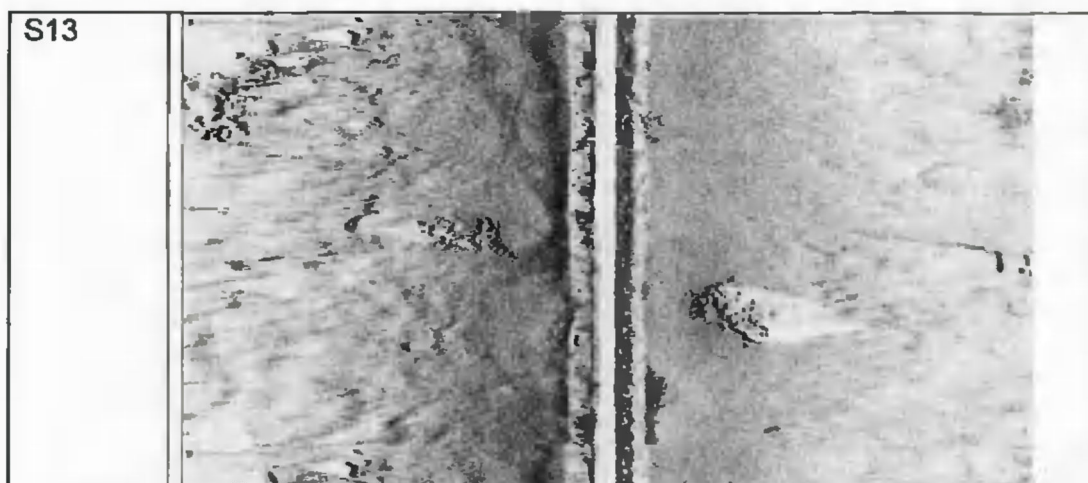
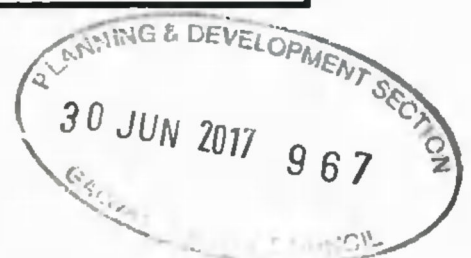


Table D3: Side-scan sonar images and dimensions of the anomalies listed in Table 12.2. All images measure 114m in the horizontal.

ID	Dimensions (m)	Description and Interpretation
S1	13.7 x 10.5	Description: Series of discrete high backscatter reflectors on the starboard channel. Interpretation: Debris mound on the seafloor – reminiscent of a ballast mound.
S2	25.4 x 14.0	Description: Series of low and high backscatter reflectors surrounding an area of uniform low tonal returns on starboard channel. Interpretation: Seafloor depression with a series of upstanding targets on its perimeter.
S3	5.9 x 1.0	Description: Linear high backscatter reflector with shadow on port channel. Interpretation: Upstanding linear feature.
S4	37.0 x 25.0	Description: Series of four high backscatter reflector groups in a cruciform arrangement on the seafloor, centred on the given co-ordinate on the starboard channel. Interpretation: It is impossible to tell if these discrete reflectors are related. Each target measures approximately 3m ² .
S5	6.4 x 1.0	Description: High backscatter sub-linear parallel targets on the port channel, with associated shadow. Interpretation: Upstanding linear target, 0.25m proud of the seafloor. The target lies adjacent to a series of bedrock outcrops, but has a distinctive geophysical signature from the natural reflectors.
S6	8.5 x 2.0	Description: Medium backscatter anomaly with high backscatter leading edge. Associated shadow. Interpretation: Upstanding rectangular shaped target. Shadow indicates the feature stands 0.5m off the seafloor.
S7	8.2 x 3.4	Description: Series of linear and curvilinear reflectors, alligned in the same orientation on an otherwise unifrom substrate. Interpretation: The morphology, geophysical signature and dimensions of the target, together with the signature of the surrounding seafloor, indicates the target may be a vessel. However, no shadow is obvious, indicating the target is lying concordant with the seafloor.
S8	20 x 20	Description: Series of high backscatter linear targets with associated shadows. Interpretation: The linear, discrete nature of the targets lying amongst bedrock indicates they are probably man-made.
S9	7.5 x 5.3	Description: Series of high backscatter linear- and sub-circular reflectors with associated shadows. Interpretation: Debris scatter.



S10	20 x 13.5	Description: Series of high backscatter, regularly spaced linear- reflectors with associated shadows on the port channel. Interpretation: The regular, linear nature of the targets indicates they may be man-made.
S11	10.19 x 1.0	Description: Regularly-shaped, high backscatter discrete anomaly on the port channel with associated shadow. Interpretation: The regular, straight-lined feature stands 0.95 m proud of the seafloor. The morphology of the target suggests a vessel heeling at an angle?
S12	5.1 x 1.0	Description: Very high backscatter, angled reflector with associated shadow. Interpretation: The target appears similar to crates imaged in other port areas. The length of the shadow indicates the object is standing 1.95m off the seafloor.
S13	14.1 x 8.2	Description: Two areas containing a series of high backscatter linear- and sub-circular reflectors with associated shadows on the port and starboard channels. Interpretation: Debris scatter / ballast mounds, similar to anomaly S1.

Table D4: Side Scan Sonar Anomaly descriptions.
See Table 12.3 for side-scan sonar anomaly images.