Project Code: C5785

South West Deeps (West) recommended Marine Conservation Zone (rMCZ) 2013 Survey Report

Authors: Paul McIlwaine

Issue date: February 2017
Published date: January 2023

South-West Deeps (West) recommended Marine Conservation Zone (rMCZ) 2013 Survey Report

Paul McIlwaine

Issue date: February 2017
(Published January 2023)

This report should be cited:
McIlwaine, P. 2023. South-West Deeps (West) recommended Marine Conservation Zone (rMCZ) 2013 Survey Report. [Contracted] Report by Cefas for Defra and JNCC (Project Code: C5785).

Head office

Centre for Environment, Fisheries & Aquaculture Science

Pakefield Road, Lowestoft, Suffolk NR33 0HT, UK

Tel +44 (0) 1502 56 2244 Fax +44 (0) 1502 51 3865

www.cefas.defra.gov.uk

Table of Contents

1 Background and Introduction

1.1 Survey Project Team

The survey at the South-West Deep (West) (SWDW) recommended Marine Conservation Zone (rMCZ) was carried out onboard the Research Vessel Cefas Endeavour (Cruise code CEND0613) between the 8th and 28th May 2013. The survey team for the duration of the fieldwork included marine scientists and surveyors from the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and marine scientists from the Joint Nature Conservation Committee (JNCC):

JNCC-Marine Ecologist	JNCC-Marine Support Officer
Cefas-Marine Ecologist	Cefas-Marine Surveyor
Cefas-Fisheries Scientist	Cefas – Marine GIS Analysist
Cefas –Marine Scientist	Cefas –Marine Scientist
Cefas – Marine Sedimentologist	Cefas – Fisheries Scientist
Cefas –Marine Scientist	Cefas – Marine Scientist
Cefas – Marine Scientist	Cefas – Planktologist
Cefas-Planktologist	

1.2 Site Description: South-West Deeps (West) rMCZ

SWDW is an offshore recommended Marine Conservation Zone proposed for designation in 2013 (Tranche 1) due to the presence of A5.1 subtidal coarse sediment, A5.2 subtidal sand, A5.4 subtidal mixed sediments and geologically important Celtic Sea Relict Sandbanks. It is located approximately 100 nautical miles west south-west of the Isles of Scilly on the south-western boundary of the UK continental shelf limit
(Figure 1).

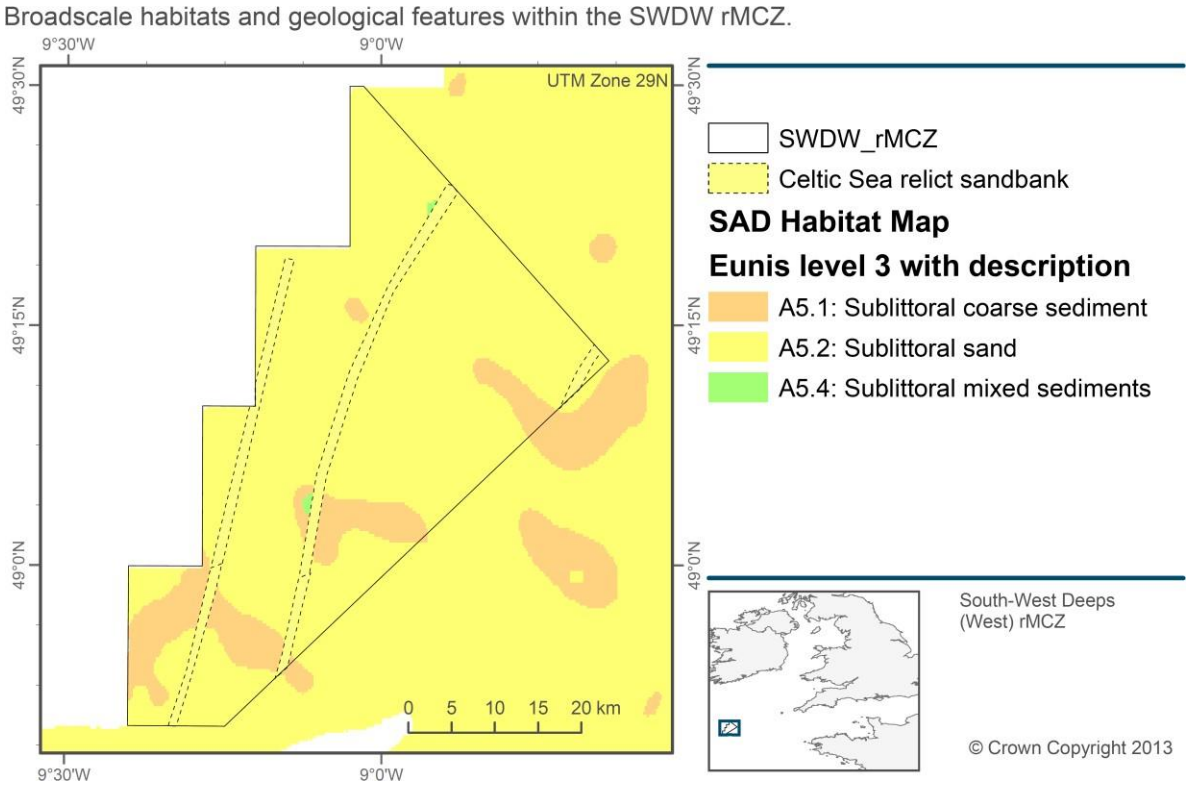


Figure 1. Broad scale habitats and geological features found within the South-West Deeps (West) rMCZ.

1.3 Existing data and information utilised to inform survey planning

Interim acoustic data (geo-referenced backscatter and preliminary bathymetric images) derived from a recent Defra funded invitation to tender (ITT) process (Gardline: Lot 4 South-West Deeps (West)) and the UKSeaMap 2010 predictive Habitat Map (v8) were used to inform the placement of groundtruthing (GT) sample stations within the rMCZ ensuring adequate spatial and feature coverage throughout the site (Figure 2 and Figure 3). Two stations, which were sampled opportunistically during a previous cruise onboard the RV Cefas Endeavour (cruise code CEND1911), are not reported presently but will be included in subsequent site-specific reporting.

2 Survey Design and Methods

2.1 Survey aims

The primary aim of the SWDW rMCZ survey was to complete a planned GT survey to provide data which would be used in conjunction with the existing multibeam echosounder (MBES) acoustic data to determine the presence and extent of broad scale habitats (BSH) and Habitat FOCI present within the SWDW rMCZ. A secondary aim of the survey was to collect MBES data and additional GT samples from nested boxes targeting features of interest to assist in meeting the primary aims of the survey.

2.2 Survey plan

A 5km spaced triangular lattice survey grid was used for the SWDW rMCZ, orientated in line with the existing acoustic data and amended such that all stations coincided with acoustic data coverage.

Stations were also placed over features identified by the acoustic backscatter data (Figure 3) thus attaining both spatial and feature coverage. It was proposed to carry out underwater video tows, using a camera sledge frame, at approximately one third of the sampling stations and to deploy a 0.1m^2 mini Hamon grab to collect benthic sediments at each groundtruthing (GT) station. Nested boxes for MBES survey and GT were to be generated during the survey using preliminary assessment of BSH to target interesting features and/or sediments.

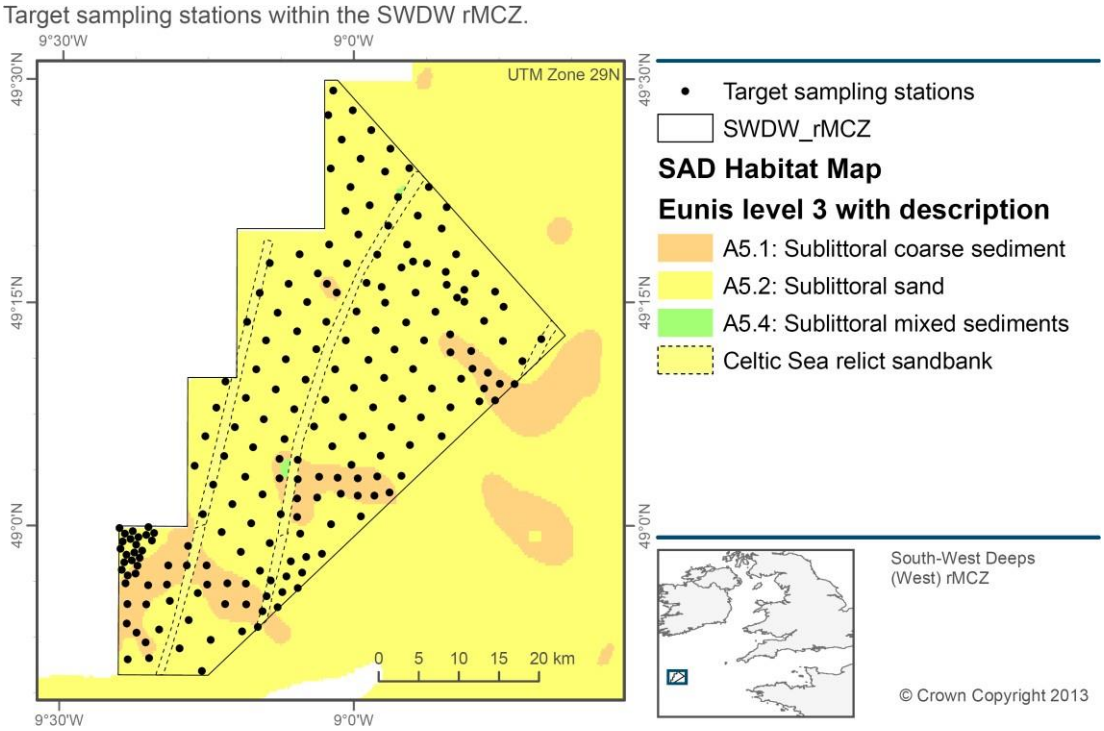


Figure 2. Planned ground truthing survey at the South-West Deeps (West) rMCZ.

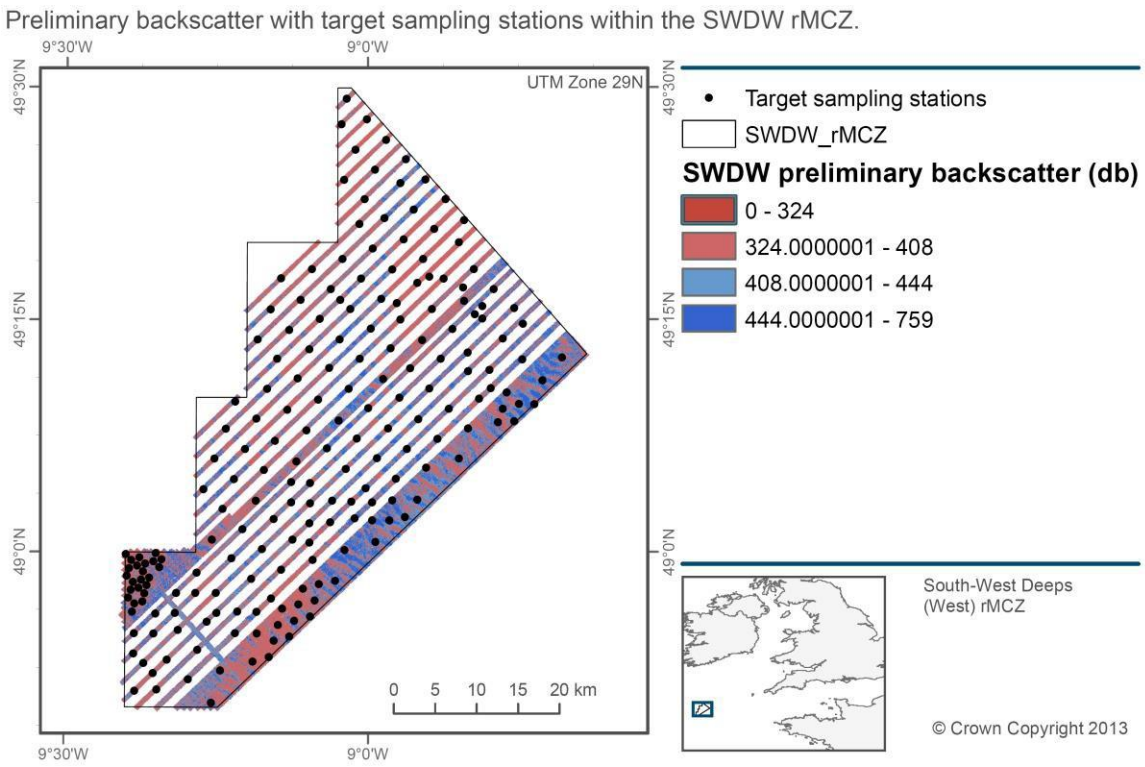


Figure 3. Preliminary backscatter with target sampling stations.

2.3 Sample collection and processing methods

2.3.1 Sediment and biological samples

Each of the planned stations were sampled using a 0.1 m^2 mini Hamon grab in order to collect benthic sediment samples for particle size analysis (PSA) and infaunal community analyses (Figure 4). 170 stations were sampled using a 0.1 m^2 mini Hamon grab fitted with a video camera (HamCam) however, 38 stations were sampled without video capture capability due to equipment malfunction.

On recovery of the mini Hamon grab, the sediment sample was decanted into a suitable container. The whole sample was photographed, and the volume measured and recorded. A representative sub-sample of sediment (approximately 0.5 litres) was taken for particle size analysis. The remaining sediment was then sieved over a sieve table consisting of a 5mm screening mesh and 1mm collection sieve. Photographs were taken of the sediment retained on both the 1mm and 5mm fractions. The retained 5mm and 1mm fractions were then combined and fixed using a buffered 4% formalin solution for transport back to the laboratory.

Figure 4. 0.1m^2 mini Hamon grab with video camera (HamCam).

2.4 Underwater seabed imaging and remote sensing techniques

2.4.1 Camera sledge

Set-up and operation of the video acquisition equipment followed the MESH 'Recommended Operating Guidelines (ROG) for underwater video and photographic imaging techniques'. Video was recorded simultaneously to a Sony GV-HD700 DV tape recorder and a computer hard drive. An onscreen overlay was used to provide station metadata, time and ships central reference GPS position in the recorded video footage.

The camera sledge system comprised a video camera with capability to also capture still images (Figure 5). Illumination was provided by underwater lights and a flash unit. The camera was fitted with a four-spot laser-scaling device and a fan beamed laser to provide a reference scale and a measure of seabed topography in the video footage/still images. The sledge was controlled by a winch operator with sight of the video monitor and note made of the amount of tow cable deployed to allow a 'lay back' correction to be applied to estimate the distance of the sledge behind the vessel. USBL positioning was also used to accurately log the position of the camera sledge on the seabed during each deployment.

Camera deployments lasted a minimum of 10 minutes and were run at 0.3-0.5 knots (~0.25 ms^{-1}) across the target station. Digital still images were captured at regular one-minute intervals and opportunistically if specific features of interest were encountered.

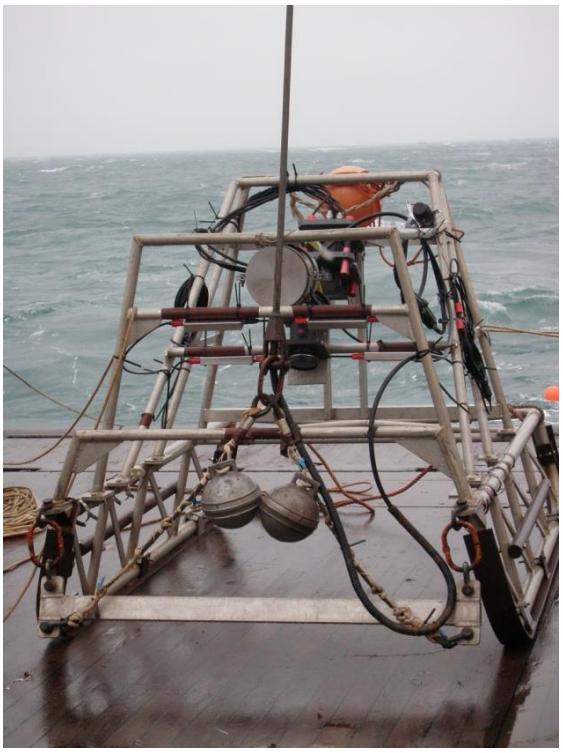


Figure 5. Camera sledge with video and stills imaging system plus USBL beacon.

2.4.2 Geophysical data acquisition

MBES data were collected using a Kongsberg 'EM2040'. Bathymetry and backscatter data were returned to the laboratory for subsequent processing using Caris HIPS and QPS FMGT software packages.

3 Survey Narrative

3.1 South-West Deeps (West) rMCZ survey narrative

The RV Cefas Endeavour steamed from the port of Swansea at 18:30 on the 7th May 2013 to commence a GT survey at the SWDW rMCZ.

The decision was made to leave Swansea before the wind speed and direction made the exit via the lock system impassable. This meant that the steam to the survey area coincided with rough seas and high wind speeds. However, arrival at the site saw more favourable conditions allowing the survey to commence straight away. A station running order was discussed with the ship's Master, with consideration made to the wind, swell and safe deployment of the GT sampling equipment.

The vessel maneuvered into position to assess conditions for the deployment of sampling gears from the side and/or stern gantry. GT began at 10:39 on the 10th May 2013, with gear being deployed from the side gantry only[1]. As the vessel pitch and roll lessened with decreasing wind speed and swell height, stern gantry deployment was judged to be safe and appropriate. Video seabed imagery was collected using the camera sledge at approximately every third station or where interesting features were observed from the HamCam deployment during grab sampling.

The GT survey ceased at 04:00 on 14th May 2013 due to safety considerations resulting from increasing wind speed and swell. The wind had also changed direction to come from the north-west while the swell remained easterly for a time. As a contingency for bad weather a selection of acoustic survey areas (nested blocks) had been planned to coincide with potential features of interest (Figure 9). However, survey lines running east-west were no longer appropriate under the prevailing weather conditions and a new acoustic survey area was planned based on the geo- referenced backscatter available onboard (Figure 9). A 3km x 8km survey area (Box A) was delineated over an area which indicated a backscatter signature gradient, with survey lines orientated to match the prevailing wind and swell. A sound velocity profile was collected using conductivity, temperature, depth probe (CTD) deployed from the side gantry and the simultaneous acoustic survey of Box A (100% bathymetric[2] coverage) commenced at 05:47 on the 14th May 2013. The side scan communications cable failed, preventing the simultaneous collection of side scan sonar data. MBES data were collected in one direction (running with the swell and wind to the south-east) as data quality was too poor in the opposite direction. An additional contingency 3km x 8km acoustic survey area, 'Box B', was placed over an interesting feature highlighted in the existing MBES data where two extremes of reflectivity were adjacent. The bathymetric survey of Box A was completed at 08:07 on the 15th May 2013.

A simultaneous acoustic survey of Box B commenced at 11:49 on the 15th May 2013 with the collection of a sound velocity profile. The side scan sonar data acquisition software failed, creating an artefact in the data stream resulting in only one line of MBES data being collected from Box B before the decision was made to return to the primary objective GT survey starting at station S007, the most south east of the planned benthic sampling station. The planned station running order was generated based on prevailing wind and swell (north westerly). On arrival at S007, deployment of sampling equipment was deemed safe and the

[1] Initially all sampling was planned from the side gantry using the drop camera mounted on the communications cable and the mini Hamon grab on the wire cable; thus the first 3 Hamon grab stations do not have video footage of the seabed.

[2] 'Bathymetric' includes both sounded depths and a measure of return signal strength (i.e. backscatter).

GT survey commenced at 17:51 on the 15th May 2013. At 17:44 17th May 2013 the HamCam communications cable developed a fault and had to be re-terminated. The video capture function of the HamCam was lost however sediment samples were still collected using the Hamon grab.

Four additional GT stations were selected in Box A (one station with HamCam only and three stations to include camera sledges and the HamCam). The primary objective GT stations were completed at 18:01 on the 18th May 2013. The additional stations were collected by 22:29 on the 18th May 2013. The weather forecast predicted strong winds, gusting to force 10, so the decision was made to transit 10 hours to the contingency site South of the Isles of Scilly (SISS) rMCZ (see separate cruise report).

The vessel returned to the SWDW rMCZ in order to collect additional, 4km x 8km nested boxes ('Box C' and 'Box D') of 100% coverage MBES data and conduct additional GT sampling, both within the original survey grid and within the nested boxes. Each box was orientated to allow for prevailing wind and swell conditions (from the north-west) and to coincide with seabed features. A sound velocity profile was collected to the south east of the first survey line of 'Box C' at 03:12 on the 24th May 2013. The quality of MBES data was assessed and the decision was made to only collect data when running survey lines in the same direction as the weather thus avoiding the collection of un- usable poor quality MBES data. The MBES survey of 'Box C' was completed at 01:46 on the 25th May and four additional GT stations placed within were sampled. The rationale behind the location and the number of additional stations required was based on perceived sediment type, derived from the 'Olex©' display[3], and an aim to ensure appropriate spatial coverage of gears within the survey box. It was noted that three unsuccessful HamCam attempts were made at station S019 during the initial GT survey grid and a camera sledge tow was not attempted. The vessel returned to S019 and successfully collected a HamCam sediment sample and performed a camera sledge tow before commencing the 100% coverage bathymetric survey of 'Box D' with a CTD probe deployment at 10:36 on the 25th May 2013. Calm weather permitted the acquisition of MBES data when running the lines in both directions. The bathymetric survey of 'Box D' was completed at 22:18 on the 25th May 2013. Two additional GT stations were selected in 'Box D' and each was sampled using both the HamCam and camera sledge by 00:42 on the 26th May 2013.

An extended 30-minute camera sledge tow was carried out at S055 due to the tentative identification of a species FOCI (Fan mussel, *Atrina fragilis*) during the camera sledge at the adjacent station, S053 and evidence of valves from dead individuals in the area.

Finally, three stations from the original grid were targeted using the camera sledge to ensure spatial coverage using this technique in an area to the southwest of the rMCZ which had 100% MBES coverage.

[3] Olex© is a navigation system with limited ocean mapping capability and provides an interactive onscreen display of seabed topography using position and depth.

4 Preliminary Results

4.1 Sediment and biological samples

208 PSA and Hamon grab samples were successfully collected from within the SWDW rMCZ including all target stations and 10 additional stations within nested MBES boxes. 84.6% of the grab stations were initially classified as A5.2 Sublittoral sand with only 13.4% and 2% assigned to A5.1 Sublittoral coarse sediment and A5.4 Sublittoral mixed sediments classifications respectively.

Complete particle size distribution will be derived during final sediment analysis thus potentially changing the initial BSH classifications illustrated in Figure 6 and Table 1 and Table 2.

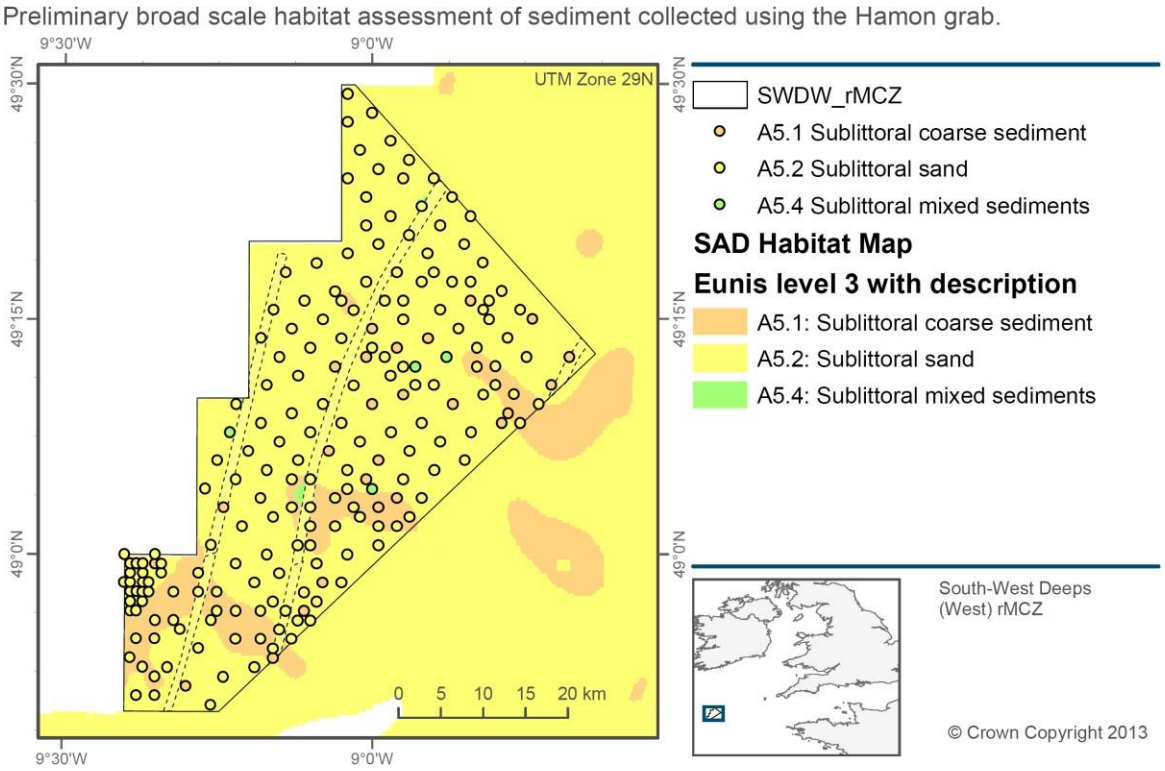


Figure 6. Preliminary sediment descriptions from Hamon grab samples.

4.2 Underwater seabed imaging and remote sensing

4.2.1 Camera sledge

In total, 74 successful camera deployments were completed with preliminary BSH assessment identifying three sediment types; A5.1 Sublittoral coarse sediment (13.5% of stations), A5.2 Sublittoral sand (71.6% of stations) and A5.4 Sublittoral mixed sediments (6.8% of stations). The remaining 8.1% of stations consisted of both A5.1 Sublittoral coarse sediment and A5.2 Sublittoral sand (Figure 7). Subsequent analyses will produce more accurate biotope assessments and thus provide more detail regarding BSH segregation within and between tows.

The SWDW rMCZ was characterised by the presence of various anemone and echinoderm species such as the starfish *Luidia sarsii* and *Stichastrella* spp., the heart urchin *Spatangus purpureus* and sea urchin *Gracilechinus acutus*. Furthermore, a tentative identification of the fan mussel, *Atrina fragilis,* is due for validation when the seabed video imagery data are

processed (Figure 8). Table 3 shows three representative still images from each tow.

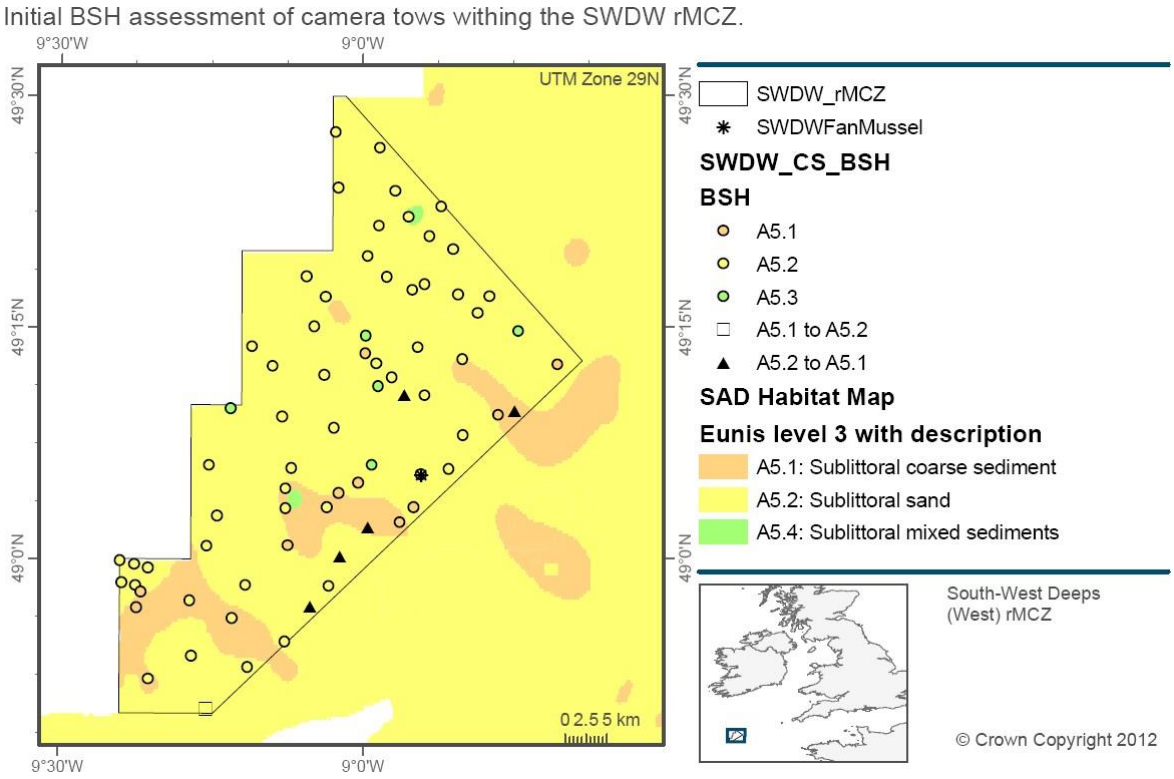


Figure 7. Preliminary sediment descriptions from video and stills data.

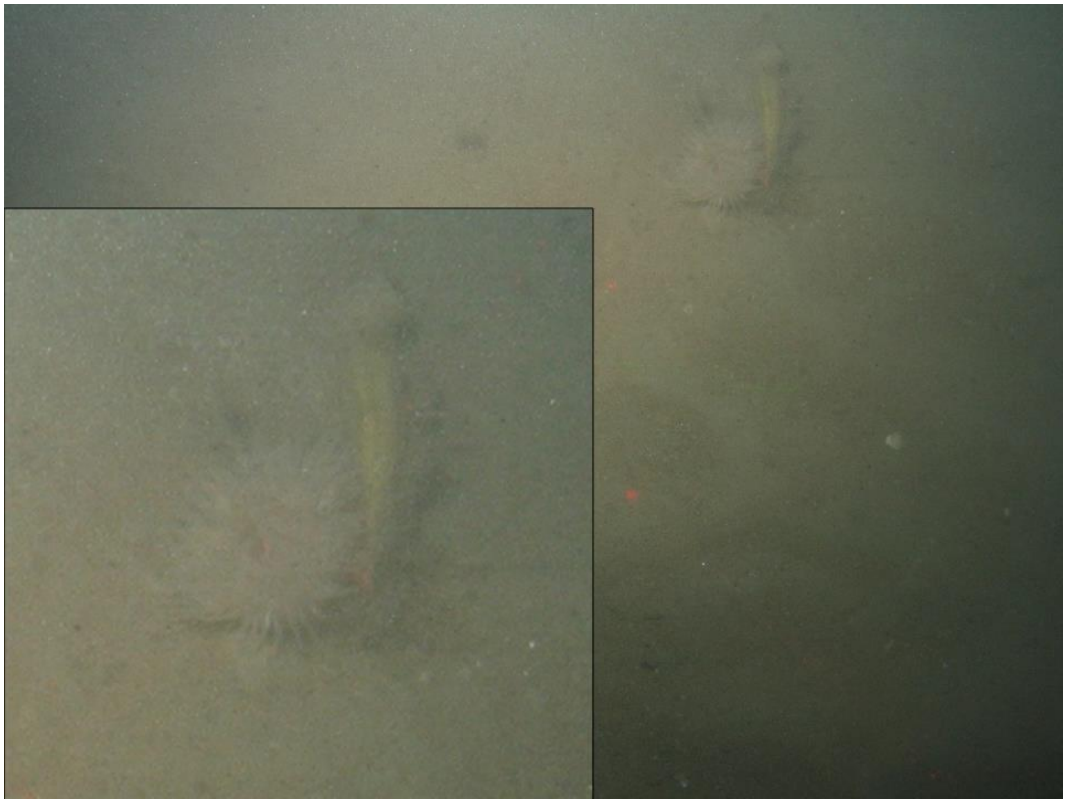


Figure 8. Possible fan mussel *Atrina fragilis* identified from station S053. Valve width approximately 13cm.

4.2.2 Geophysical data

Equipment used in the acquisition of MBES data had been calibrated during the previous survey (CEND0513). Three nested boxes of acoustic MBES data were collected (Figure 10). Box A was collected during a period of strong wind which temporarily prevented continuation of the GT survey. One line (8km) of MBES data was collected at Box B prior to returning to GT operations and abandoning the MBES survey at Box B. Box C and Box D were collected during the second visit to the SWDW rMCZ.

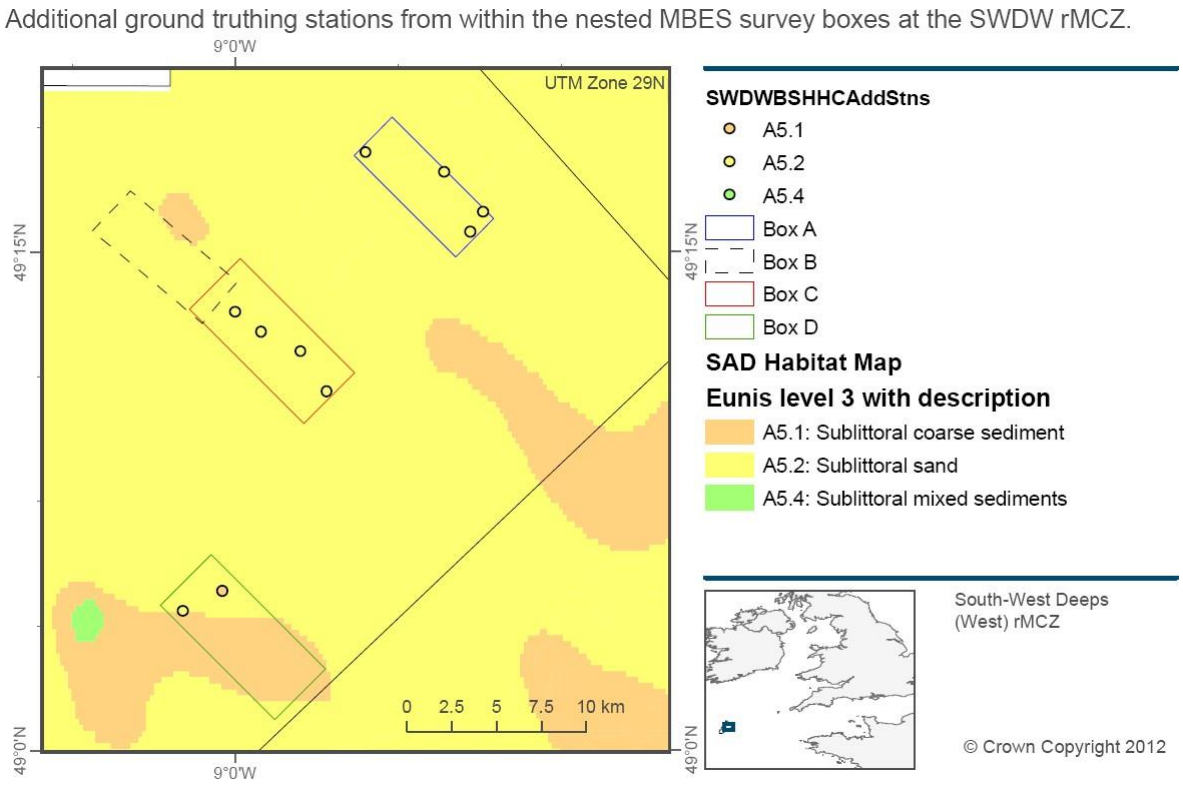
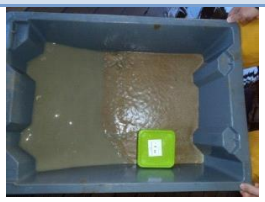
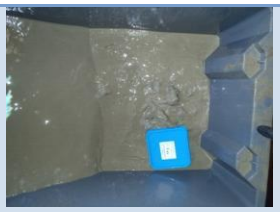
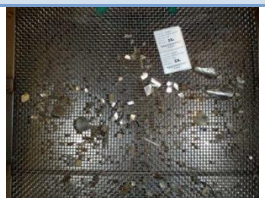


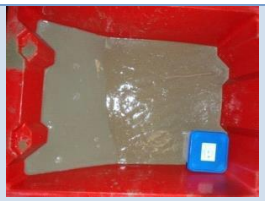
Figure 9 Nested boxes for MBES survey with additional stations and preliminary assessment of BSH.

Table 1. Sediment images and initial BSH assessment of SWDW rMCZ Hamon grab samples.

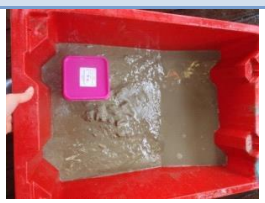
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S024_STN_001_A1*				Sand
SWDW_CEND0613_S023_STN_002_A1*				Sand
SWDW_CEND0613_GT37_STN_003_A1*				Sand
SWDW_CEND0613_S022_STN_005_A1				Sand
SWDW_CEND0613_S021_STN_007_A1				Sand
SWDW_CEND0613_S025_STN_008_A2				Sand
SWDW_CEND0613_S020_STN_009_A3				Sand
SWDW_CEND0613_S012_STN_010_A1				Sand

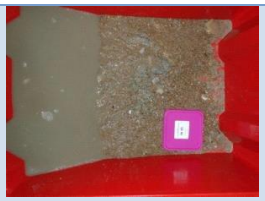
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S011_STN_012_A1				Sand
SWDW_CEND0613_GT40_STN_013_A1				Sand
SWDW_CEND0613_S026_STN_016_A1				Sand
SWDW_CEND0613_S027_STN_017_A1				Sand
SWDW_CEND0613_C02_STN_020_A1				Sand
SWDW_CEND0613_GT36_STN_022_A1				Sand
SWDW_CEND0613_S098_STN_023_A1				Sand
SWDW_CEND0613_S104_STN_024_A1				Sand

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S108_STN_026_A1				Sand
SWDW_CEND0613_S113_STN_027_A1				Sand
SWDW_CEND0613_C01_STN_029_A1				Sand
SWDW_CEND0613_S018_STN_030_A1				Sand
SWDW_CEND0613_S028_STN_032_A3				Sand
SWDW_CEND0613_GT41_STN_033_A1				Sand
SWDW_CEND0613_S118_STN_035_A1				Sand
SWDW_CEND0613_S112_STN_036_A1				Sand

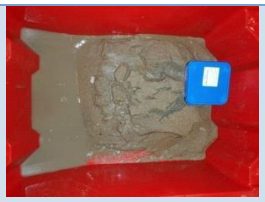
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S107_STN_038_A1				Sand
SWDW_CEND0613_S103_STN_039_A1				Sand
SWDW_CEND0613_S097_STN_041_A1				Sand
SWDW_CEND0613_S092_STN_042_A1				Sand
SWDW_CEND0613_S084_STN_043_A1				Sand
SWDW_CEND0613_S091_STN_045_A1				Sand
SWDW_CEND0613_S096_STN_046_A1				Sand
SWDW_CEND0613_S102_STN_048_A1				Sand

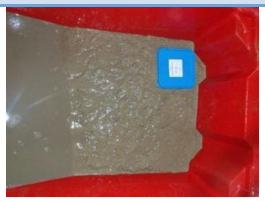
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S101_STN_049_A1				Sand
SWDW_CEND0613_S106_STN_050_A1				Sand
SWDW_CEND0613_GT38_STN_052_A1				Sand
SWDW_CEND0613_GT39_STN_053_A1				Sand
SWDW_CEND0613_S117_STN_055_A1				Sand
SWDW_CEND0613_S017_STN_056_A1				Sand
SWDW_CEND0613_S013_STN_057_A1				Sand
SWDW_CEND0613_S109_STN_059_A1				Coarse

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S110_STN_060_A1				Sand
SWDW_CEND0613_S105_STN_061_A1				Sand
SWDW_CEND0613_S100_STN_062_A1				Coarse
SWDW_CEND0613_S095_STN_064_A1				Sand
SWDW_CEND0613_S090_STN_065_A1				Sand
SWDW_CEND0613_S080_STN_066_A1				Sand
SWDW_CEND0613_S076_STN_069_A1				Sand
SWDW_CEND0613_S085_STN_070_A1				Sand

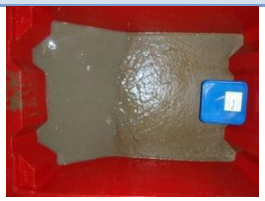
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S079_STN_071_A1				Sand
SWDW_CEND0613_S089_STN_072_A1				Coarse
SWDW_CEND0613_S094_STN_074_A1				Coarse
SWDW_CEND0613_S099_STN_075_A1				Coarse
SWDW_CEND0613_S069_STN_076_A1				Coarse
SWDW_CEND0613_S111_STN_078_A1				Sand
SWDW_CEND0613_S114_STN_079_A1				Sand
SWDW_CEND0613_S014_STN_080_A1				Sand
SWDW_CEND0613	File corrupt	File corrupt	File corrupt	Coarse

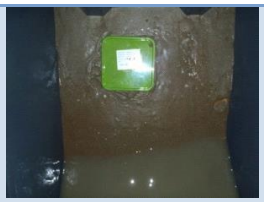
Station	PSA	5mm	1mm	BSH
3_S015_STN_081_A1				
SWDW_CEND0613_S115_STN_083_A1	File corrupt	File corrupt		Sand
SWDW_CEND0613_C31_STN_084_A1				Sand
SWDW_CEND0613_S068_STN_086_A1				Mixed
SWDW_CEND0613_S067_STN_087_A1				Mixed
SWDW_CEND0613_S093_STN_088_A1				Sand
SWDW_CEND0613_S088_STN_090_A1				Sand
SWDW_CEND0613_S078_STN_091_A1				Sand
SWDW_CEND0613_S086_STN_092_A1				Sand

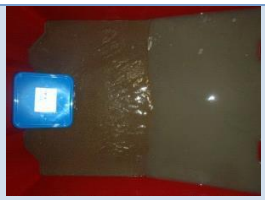
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S075_STN_094_A1				Sand
SWDW_CEND0613_S072_STN_095_A1				Mixed
SWDW_CEND0613_S046_STN_096_A1				Sand
SWDW_CEND0613_S071_STN_098_A1				Sand
SWDW_CEND0613_S074_STN_099_A1				Sand
SWDW_CEND0613_S087_STN_100_A1				Sand
SWDW_CEND0613_S077_STN_101_A1				Sand
SWDW_CEND0613_S062_STN_103_A1				Coarse

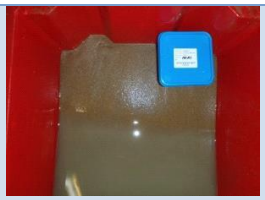
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S064_STN_104_A1				Coarse
SWDW_CEND0613_S066_STN_105_A1				Sand
SWDW_CEND0613_C32_STN_107_A1				Sand
SWDW_CEND0613_C33_STN_108_A1				Sand
SWDW_CEND0613_S116_STN_109_A1				Sand
SWDW_CEND0613_S016_STN_110_A1				Coarse
SWDW_CEND0613_S029_STN_112_A1				Coarse
SWDW_CEND0613_C35_STN_113_A1				Sand

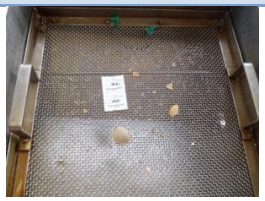
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_C34_STN_114_A1				Sand
SWDW_CEND0613_S057_STN_115_A1				Sand
SWDW_CEND0613_S065_STN_116_A1				Coarse
SWDW_CEND0613_S063_STN_117_A1				Sand
SWDW_CEND0613_S061_STN_118_A1				Sand
SWDW_CEND0613_S059_STN_119_A1				Coarse
SWDW_CEND0613_S081_STN_120_A1				Coarse
SWDW_CEND0613_S073_STN_121_A1				Sand

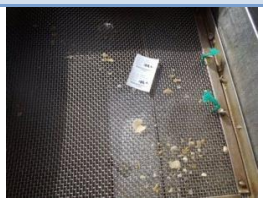
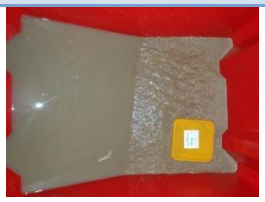
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S070_STN_123_A1				Sand
SWDW_CEND0613_S045_STN_124_A1				Sand
SWDW_CEND0613_S043_STN_125_A1				Sand
SWDW_CEND0613_S042_STN_126_A1				Coarse
SWDW_CEND0613_S044_STN_128_A1				Sand
SWDW_CEND0613_C17_STN_129_A1				Sand
SWDW_CEND0613_S007_STN_136_A1				Sand
SWDW_CEND0613_S006_STN_137_A2				Sand

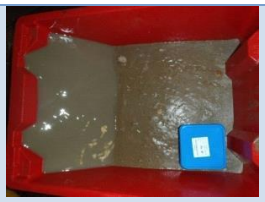
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_C10_STN_138_A2				Sand
SWDW_CEND0613_C09_STN_140_A1				Sand
SWDW_CEND0613_C08_STN_141_A2				Coarse
SWDW_CEND0613_S031_STN_142_A2				Coarse
SWDW_CEND0613_GT01_STN_143_A1				Sand
SWDW_CEND0613_GT03_STN_144_A1				Sand
SWDW_CEND0613_GT02_STN_145_A1				Sand
SWDW_CEND0613_GT04_STN_146_A1				Sand

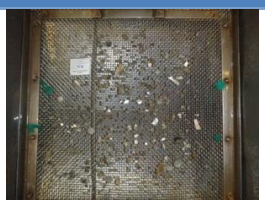
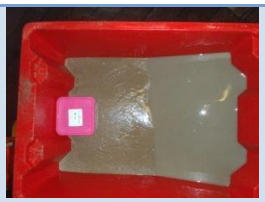
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_GT06_STN_147_A1				Sand
SWDW_CEND0613_GT05_STN_148_A1				Sand
SWDW_CEND0613_GT07_STN_150_A1				Sand
SWDW_CEND0613_GT08_STN_151_A1				Sand
SWDW_CEND0613_GT11_STN_153_A1				Sand
SWDW_CEND0613_GT14_STN_154_A1				Sand
SWDW_CEND0613_GT16_STN_155_A1				Sand
SWDW_CEND0613_GT13_STN_156_A1				Sand

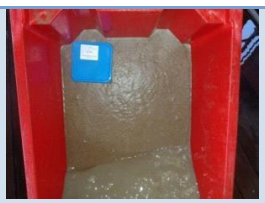
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_GT10_STN_157_A1				Sand
SWDW_CEND0613_GT09_STN_158_A1				Sand
SWDW_CEND0613_GT12_STN_160_A1				Sand
SWDW_CEND0613_GT15_STN_161_A1				Sand
SWDW_CEND0613_GT18_STN_162_A1				Sand
SWDW_CEND0613_GT19_STN_163_A1				Sand
SWDW_CEND0613_GT17_STN_164_A1				Sand
SWDW_CEND0613_GT20STN_166_A1				Coarse

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_GT22_STN_167_A1				Sand
SWDW_CEND0613_GT23_STN_168_A1				Sand
SWDW_CEND0613_GT21_STN_169_A1				Sand
SWDW_CEND0613_S032_STN_170_A1				Sand
SWDW_CEND0613_C07_STN_171_A1				Sand
SWDW_CEND0613_S004_STN_172_A1				Sand
SWDW_CEND0613_S003_STN_173_A1				Coarse
SWDW_CEND0613_S002_STN_174_A1				Sand

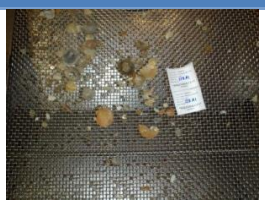
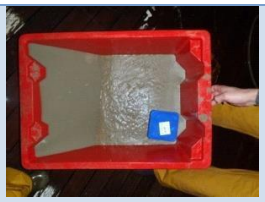
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S001_STN_176__A1				Sand
SWDW_CEND0613_S005_STN_177__A1				Sand
SWDW_CEND0613_S040_STN_179_A1				Sand
SWDW_CEND0613_C06_STN_180_A1				Sand
SWDW_CEND0613_C03_STN_181_A1				Sand
SWDW_CEND0613_C04_STN_182_A1				Sand
SWDW_CEND0613_C05_STN_183_A1				Sand
SWDW_CEND0613_S041_STN_185_A1				Sand

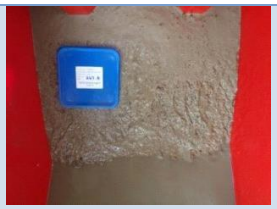
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_C12_STN_186_A1				Sand
SWDW_CEND0613_C14_STN_187_A1				Sand
SWDW_CEND0613_GT24_STN_188_A1				Sand
SWDW_CEND0613_GT25_STN_190_A1				Coarse
SWDW_CEND0613_GT26_STN_191_A1				Sand
SWDW_CEND0613_C16_STN_192_A1				Sand
SWDW_CEND0613_C13_STN_193_A1				Sand
SWDW_CEND0613_C11_STN_195_A1				Sand

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S034_STN_196_A1				Sand
SWDW_CEND0613_S039_STN_197_A1				Sand
SWDW_CEND0613_S036_STN_199_A1				Sand
SWDW_CEND0613_S035_STN_200_A1				Sand
SWDW_CEND0613_S033_STN_201_A1				Sand
SWDW_CEND0613_C15_STN_203_A1				Sand
SWDW_CEND0613_GT27_STN_205_A1				Sand
SWDW_CEND0613_GT28_STN_206_A1				Sand

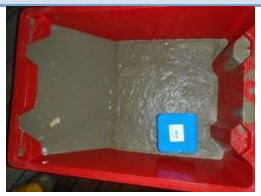
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_GT30_STN_208_A1				Sand
SWDW_CEND0613_GT32_STN_209_A1				Sand
SWDW_CEND0613_GT34_STN_210_A1				Sand
SWDW_CEND0613_GT31_STN_212_A1				Coarse
SWDW_CEND0613_GT29_STN_213_A1				Sand
SWDW_CEND0613_S009_STN_214_A1				Sand
SWDW_CEND0613_S008_STN_215_A1				Sand
SWDW_CEND0613_GT33_STN_216_A1				Sand

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_GT35_STN_217_A1				Coarse
SWDW_CEND0613_S047_STN_218_A1				Sand
SWDW_CEND0613_S010_STN_220_A1				Sand
SWDW_CEND0613_C23_STN_221_A1				Sand
SWDW_CEND0613_S037_STN_222_A1				Sand
SWDW_CEND0613_S038_STN_224_A2*				Sand
SWDW_CEND0613_C18_STN_225_A1*				Sand
SWDW_CEND0613_C19_STN_227_A1*				Sand

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_C20_STN_228_A1*				Sand
SWDW_CEND0613_C21_STN_229_A1*				Sand
SWDW_CEND0613_S050_STN_230_A1*				Sand
SWDW_CEND0613_C24_STN_232_A1*				Sand
SWDW_CEND0613_C22_STN_233_A1*				Sand
SWDW_CEND0613_S082_STN_235_A1*				Sand
SWDW_CEND0613_C25_STN_236_A1*				Sand
SWDW_CEND0613_S048_STN_237_A1*				Sand

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S051_STN_238_A1*				Sand
SWDW_CEND0613_C27_STN_239_A1*				Sand
SWDW_CEND0613_C26_STN_241_A1*				Coarse
SWDW_CEND0613_S083_STN_242_A1*				Mixed
SWDW_CEND0613_S058_STN_243_A1				Coarse
SWDW_CEND0613_SO49_STN_245_A1*				Sand
SWDW_CEND0613_C28_STN_246_A1*				Coarse
SWDW_CEND0613_C29_STN_247_A1*				Sand

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_C30_STN_248_A1*				Sand
SWDW_CEND0613_S052_STN_250_A1*				Sand
SWDW_CEND0613_S051_STN_251_A1*				Sand
SWDW_CEND0613_S060_STN_253_A1*				Sand
SWDW_CEND0613_S054_STN_254_A1*				Sand
SWDW_CEND0613_S055_STN_255_A1*				Sand
SWDW_CEND0613_S056_STN_256_A1*				Sand

Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_S030_STN_258_A1*				Coarse
SWDW_CEND0613_C36_STN_259_A1*				Coarse
SWDW_CEND0613_C38_STN_261_A1*				Sand
SWDW_CEND0613_C37_STN_262_A1*				Sand
SWDW_CEND0613_C39_STN_264_A1*				Sand
SWDW_CEND0613_AddGT04_STN_265_A1*				Sand
SWDW_CEND0613_AddGT01_STN_266_A1*				Sand
SWDW_CEND0613_AddGT02_STN_269_A1*				Sand

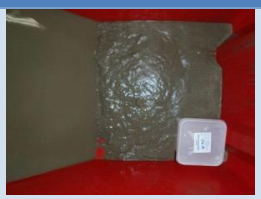
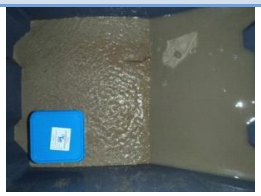
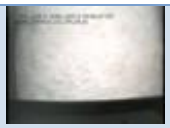
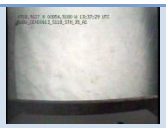
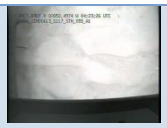
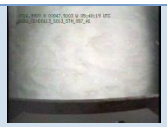
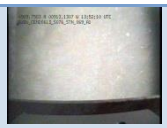
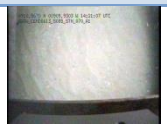
Station	PSA	5mm	1mm	BSH
SWDW_CEND0613_AddGT03_STN_270_A1*				Sand
SWDW_CEND0613_AddGT06_STN_362_A1				Sand
SWDW_CEND0613_AddGT08_STN_364_A1				Sand
SWDW_CEND0613_AddGT05_STN_366_A1				Sand
SWDW_CEND0613_AddGT07_STN_368_A1				Sand
SWDW_CEND0613_S019_STN_370_A1				Sand
SWDW_CEND0613_AddGT09_STN_374_A1				Coarse
SWDW_CEND0613_AddGT10_STN_376_A1				Sand

Table 2. HamCam pre-impact seabed images.

Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _S022_ STN_005		NA	NA	A1	Sand
SWDW_CEND0613 _S021_ STN_007		NA	NA	A1	Sand
SWDW_CEND0613 _S025_ STN_008			NA	A2	Sand
SWDW_CEND0613 _S020_ STN_009			NA	A2	Sand
SWDW_CEND0613 _S012_ STN_010		NA	NA	A1	Sand
SWDW_CEND0613 _S011_ STN_012		NA	NA	A1	Sand
SWDW_CEND0613 _GT40_ STN_013		NA	NA	A1	Sand
SWDW_CEND0613 _S026_ STN_016		NA	NA	A1	Sand
SWDW_CEND0613 _S027_ STN_017		NA	NA	A1	Sand
SWDW_CEND0613 _S019_ STN_019				No Sample	
SWDW_CEND0613 _C02_ STN_020		NA	NA	A1	Sand
SWDW_CEND0613 _GT36_ STN_022		NA	NA	A1	Sand

Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _S098_ STN_023		NA	NA	A1	Sand
SWDW_CEND0613 _S104_ STN_024		NA	NA	A1	Sand
SWDW_CEND0613 _S108_ STN_026		NA	NA	A1	Sand
SWDW_CEND0613 _S113_ STN_027		NA	NA	A1	Sand
SWDW_CEND0613 _C01_ STN_029					Sand
SWDW_CEND0613 _S018_ STN_030		NA	NA	A1	Sand
SWDW_CEND0613 _S028_ STN_032				A3	Sand
SWDW_CEND0613 _GT41_ STN_033		NA	NA	A1	Sand
SWDW_CEND0613 _S118_ STN_035		NA	NA	A1	Sand
SWDW_CEND0613 _S112_ STN_036					Sand
SWDW_CEND0613 _S107_ STN_038		NA	NA	A1	Sand
SWDW_CEND0613 _S103_ STN_039		NA	NA	A1	Sand
SWDW_CEND0613 _S097_ STN_041	Grab not recorded				Sand

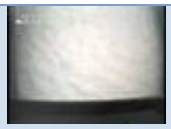
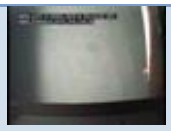
Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _S092_ STN_042				A3	Sand
SWDW_CEND0613 _S084_ STN_043				A3	Sand
SWDW_CEND0613 _S084_ STN_045	Video file corrupted				Sand
SWDW_CEND0613 _S096_ STN_046	Grab not recorded				Sand
SWDW_CEND0613 _S102_ STN_048		NA	NA	A1	Sand
SWDW_CEND0613 _S101_ STN_049		NA	NA	A1	Sand
SWDW_CEND0613 _S106_ STN_050		NA	NA	A1	Sand
SWDW_CEND0613 _GT38_ STN_052		NA	NA	A1	Sand
SWDW_CEND0613 _GT39_ STN_053	Grab not recorded.		NA	A2	Sand
SWDW_CEND0613 _S117_ STN_055		NA	NA	A1	Sand
SWDW_CEND0613 _S017_ STN_056		NA	NA	A1	Sand
SWDW_CEND0613 _S013_ STN_057		NA	NA	A1	Sand
SWDW_CEND0613 _S109_ STN_059		NA	NA	A1	Coarse

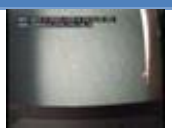
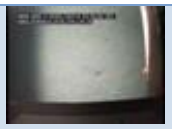
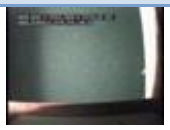
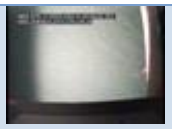
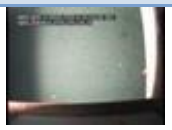
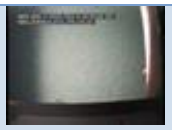
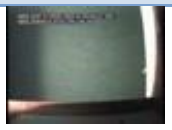
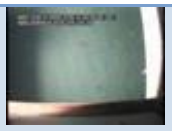
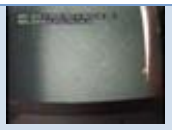
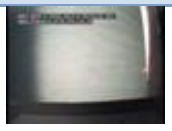
Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613_S110_STN_060		NA	NA	A1	Sand
SWDW_CEND0613_S105_STN_061		NA	NA	A1	Sand
SWDW_CEND0613_S100_STN_062		NA	NA	A1	Coarse
SWDW_CEND0613_S095_STN_064		NA	NA	A1	Sand
SWDW_CEND0613_S090_STN_065		NA	NA	A1	Sand
SWDW_CEND0613_S080_STN_066		NA	NA	A1	Sand
SWDW_CEND0613_S076_STN_069		NA	NA	A1	Sand
SWDW_CEND0613_S085_STN_070		NA	NA	A1	Sand
SWDW_CEND0613_S079_STN_071		NA	NA	A1	Sand
SWDW_CEND0613_S089_STN_072			NA	A2	Coarse
SWDW_CEND0613_S094_STN_074		NA	NA	A1	Coarse
SWDW_CEND0613_S099_STN_075		NA	NA	A1	Coarse
SWDW_CEND0613_S069_STN_076		NA	NA	A1	Coarse

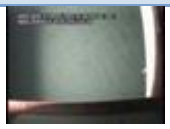
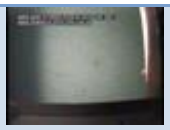
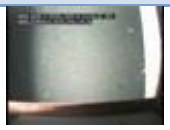
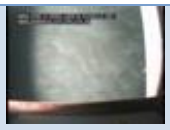
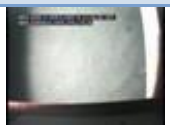
Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _S111_ STN_078		NA	NA	A1	Sand
SWDW_CEND0613 _S114_ STN_079		NA	NA	A1	Sand
SWDW_CEND0613 _S014_ STN_080		NA	NA	A1	Sand
SWDW_CEND0613 _S015_ STN_081		NA	NA	A1	Coarse
SWDW_CEND0613 _S115_ STN_083		NA	NA	A1	Sand
SWDW_CEND0613 _C31_ STN_084		NA	NA	A1	Sand
SWDW_CEND0613 _S086_ STN_086		NA	NA	A1	Mixed
SWDW_CEND0613 _S067_ STN_087		NA	NA	A1	Mixed
SWDW_CEND0613 _S093_ STN_088		NA	NA	A1	Sand
SWDW_CEND0613 _S088_ STN_090		NA	NA	A1	Sand
SWDW_CEND0613 _S078_ STN_091		NA	NA	A1	Sand
SWDW_CEND0613 _S086_ STN_092		NA	NA	A1	Sand
SWDW_CEND0613 _S075_ STN_094		NA	NA	A1	Sand

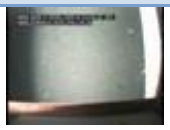
Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _S072_ STN_095		NA	NA	A1	Mixed
SWDW_CEND0613 _S046_ STN_096		NA	NA	A1	Sand
SWDW_CEND0613 _S071_ STN_098		NA	NA	A1	Sand
SWDW_CEND0613 _S074_ STN_099		NA	NA	A1	Sand
SWDW_CEND0613 _S087_ STN_100		NA	NA	A1	Sand
SWDW_CEND0613 _S077_ STN_101		NA	NA	A1	Sand
SWDW_CEND0613 _S062_ STN_103		NA	NA	A1	Coarse
SWDW_CEND0613 _S064_ STN_104		NA	NA	A1	Coarse
SWDW_CEND0613 _S066_ STN_105		NA	NA	A1	Sand
SWDW_CEND0613 _C32_ STN_107		NA	NA	A1	Sand
SWDW_CEND0613 _C33_ STN_108		NA	NA	A1	Sand
SWDW_CEND0613 _S116_ STN_109		NA	NA	A1	Sand
SWDW_CEND0613 _S016_ STN_110			NA	A2	Coarse

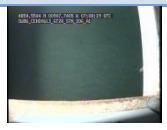
Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _S029_ STN_112		NA	NA	A1	Coarse
SWDW_CEND0613 _C35_ STN_113		NA	NA	A1	Sand
SWDW_CEND0613 _C34_ STN_114		NA	NA	A1	Sand
SWDW_CEND0613 _S057_ STN_115		NA	NA	A1	Sand
SWDW_CEND0613 _S065_ STN_116		NA	NA	A1	Coarse
SWDW_CEND0613 _S063_ STN_117		NA	NA	A1	Sand
SWDW_CEND0613 _S061_ STN_118			NA	A2	Sand
SWDW_CEND0613 _S059_ STN_119		NA	NA	A1	Coarse
SWDW_CEND0613 _S081_ STN_120		NA	NA	A1	Coarse
SWDW_CEND0613 _S073_ STN_121		NA	NA	A1	Sand
SWDW_CEND0613 _S070_ STN_123		NA	NA	A1	Sand
SWDW_CEND0613 _S045_ STN_124		NA	NA	A1	Sand
SWDW_CEND0613 _S043_ STN_125			NA	A2	Sand

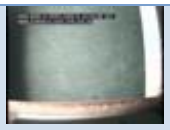
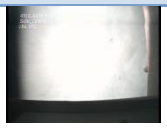
Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _S042_ STN_126		NA	NA	A1	Coarse
SWDW_CEND0613 _S044_ STN_128		NA	NA	A1	Sand
SWDW_CEND0613 _C17_ STN_129				A3	Sand
SWDW_CEND0613 _C19_ STN_131				A1	Sand
SWDW_CEND0613 _S007_ STN_136		NA	NA	A1	Sand
SWDW_CEND0613 _S006_ STN_137			NA	A2	Sand
SWDW_CEND0613 _C10_ STN_138			NA	A2	Sand
SWDW_CEND0613 _C09_ STN_140	Video file corrupted	NA	NA	A1	Coarse
SWDW_CEND0613 _C08_ STN_141			NA	A2	Coarse
SWDW_CEND0613 _S031_ STN_142			NA	A2	Sand
SWDW_CEND0613 _GT01_ STN_143		NA	NA	A1	Sand
SWDW_CEND0613 _GT03_ STN_144		NA	NA	A1	Sand
SWDW_CEND0613 _GT02_ STN_145		NA	NA	A1	Sand

Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _GT04_ STN_146		NA	NA	A1	Sand
SWDW_CEND0613 _GT06_ STN_147		NA	NA	A1	Sand
SWDW_CEND0613 _GT05_ STN_148		NA	NA	A1	Sand
SWDW_CEND0613 _GT07_ STN_150			NA	A2	Sand
SWDW_CEND0613 _GT08_ STN_151		NA	NA	A1	Sand
SWDW_CEND0613 _GT11_ STN_153		NA	NA	A1	Sand
SWDW_CEND0613 _GT14_ STN_154		NA	NA	A1	Sand
SWDW_CEND0613 _GT16_ STN_155		NA	NA	A1	Sand
SWDW_CEND0613 _GT13_ STN_156		NA	NA	A1	Sand
SWDW_CEND0613 _GT10_ STN_157		NA	NA	A1	Sand
SWDW_CEND0613 _GT09_ STN_158		NA	NA	A1	Sand
SWDW_CEND0613 _GT12_ STN_160		NA	NA	A1	Sand
SWDW_CEND0613 _GT15_ STN_161		NA	NA	A1	Sand

Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _GT18_ STN_162		NA	NA	A1	Sand
SWDW_CEND0613 _GT19_ STN_163		NA	NA	A1	Sand
SWDW_CEND0613 _GT17_ STN_164		NA	NA	A1	Coarse
SWDW_CEND0613 _GT20_ STN_166		NA	NA	A1	Sand
SWDW_CEND0613 _GT22_ STN_167		NA	NA	A1	Sand
SWDW_CEND0613 _GT23_ STN_168		NA	NA	A1	Sand
SWDW_CEND0613 _GT21_ STN_169		NA	NA	A1	Sand
SWDW_CEND0613 _S032_ STN_170				A3	Sand
SWDW_CEND0613 _C07_ STN_171		NA	NA	A1	Sand
SWDW_CEND0613 _S004_STN_172		NA	NA	A1	Coarse
SWDW_CEND0613 _S003_STN_173		NA	NA	A1	Sand
SWDW_CEND0613 _S002_STN_174		NA	NA	A1	Sand
SWDW_CEND0613 _S001_STN_176		NA	NA	A1	Sand

Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613_S005_STN_177		NA	NA	A1	Sand
SWDW_CEND0613_S040_STN_179		NA	NA	A1	Sand
SWDW_CEND0613_C06_STN_180			NA	A2	Sand
SWDW_CEND0613_C03_STN_181		NA	NA	A1	Sand
SWDW_CEND0613_C04_STN_182		NA	NA	A1	Coarse
SWDW_CEND0613_C05_STN_183		NA	NA	A1	Sand
SWDW_CEND0613_S041_STN_185		NA	NA	A1	Sand
SWDW_CEND0613_C12_STN_186		NA	NA	A1	Sand
SWDW_CEND0613_C14_STN_187		NA	NA	A1	Sand
SWDW_CEND0613_GT24_STN_188		NA	NA	A1	Sand
SWDW_CEND0613_GT25_STN_190		NA	NA	A1	Sand
SWDW_CEND0613_GT26_STN_191		NA	NA	A1	Sand
SWDW_CEND0613_C16_STN_192		NA	NA	A1	Sand

Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613 _C13_STN_193		NA	NA	A1	Sand
SWDW_CEND0613 _C11_STN_195		NA	NA	A1	Sand
SWDW_CEND0613 _S034_STN_196		NA	NA	A1	Sand
SWDW_CEND0613 _S039_STN_197		NA	NA	A1	Sand
SWDW_CEND0613 _S036_STN_199		NA	NA	A1	Sand
SWDW_CEND0613 _S035_STN_200		NA	NA	A1	Sand
SWDW_CEND0613 _S033_STN_201		NA	NA	A1	Sand
SWDW_CEND0613 _C15_STN_203		NA	NA	A1	Sand
SWDW_CEND0613 _GT25_STN_205		NA	NA	A1	Sand
SWDW_CEND0613 _GT28_STN_206		NA	NA	A1	Sand
SWDW_CEND0613 _GT30_STN_208		NA	NA	A1	Sand
SWDW_CEND0613 _GT32_STN_209		NA	NA	A1	Sand
SWDW_CEND0613 _GT10_STN_210		NA	NA	A1	Sand

Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613_GT31_STN_212_A1		NA	NA	A1	coarse
SWDW_CEND0613_GT29_STN_213_A1		NA	NA	A1	Sand
SWDW_CEND0613_S009_STN_214_A1		NA	NA	A1	Sand
SWDW_CEND0613_S008_STN_215_A1		NA	NA	A1	Sand
SWDW_CEND0613_GT33_STN216_A1		NA	NA	A1	Sand
SWDW_CEND0613_GT35_STN217_A1		NA	NA	A1	coarse
SWDW_CEND0613_S047_STN_218_A1		NA	NA	A1	Sand
SWDW_CEND0613_S010_STN_220_A1		NA	NA	A1	Sand
SWDW_CEND0613_C23_STN_221_A1		NA	NA	A1	Sand
SWDW_CEND0613_S037_STN_222_A1		NA	NA	A1	Sand
SWDW_CEND0613_AddGT06_STN_362_A1		NA	NA	A1	Sand
SWDW_CEND0613_AddGT08_STN_364_A1		NA	NA	A1	Sand
SWDW_CEND0613_AddGT05_STN_366_A1		NA	NA	A1	Sand

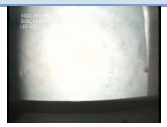
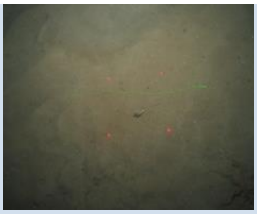
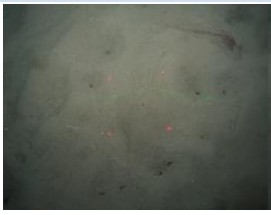
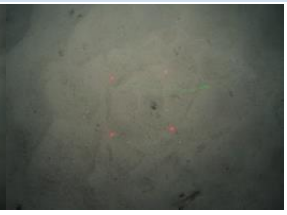
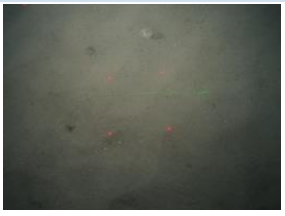
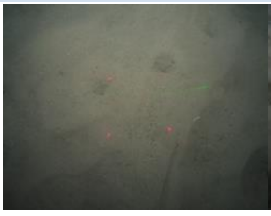
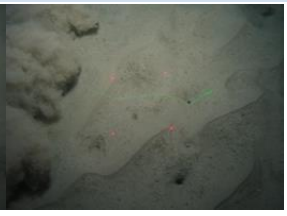
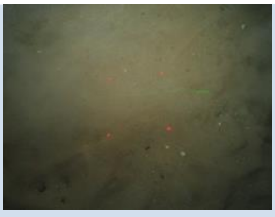
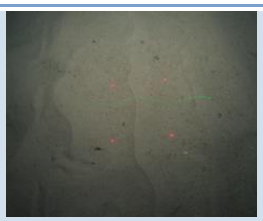
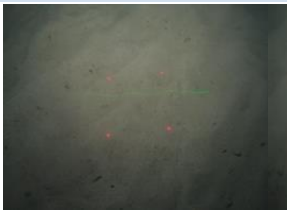
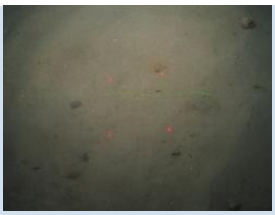
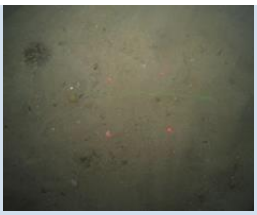
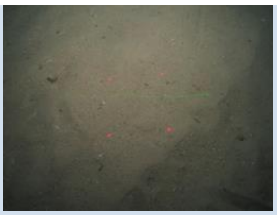
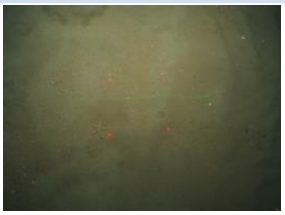
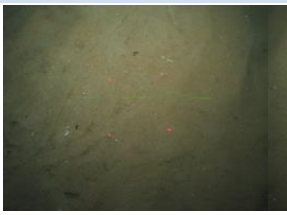
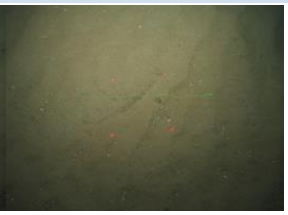
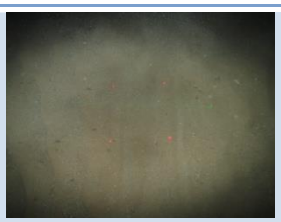
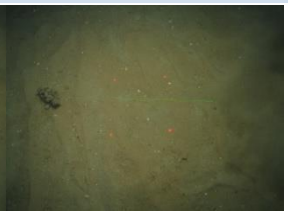
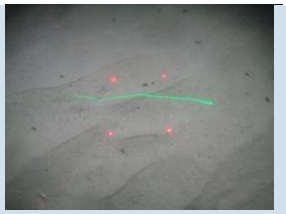
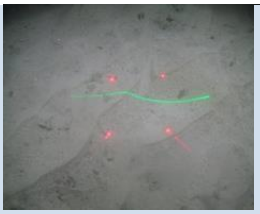
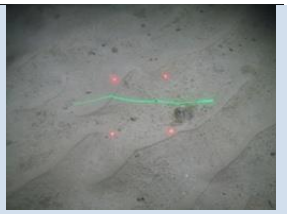
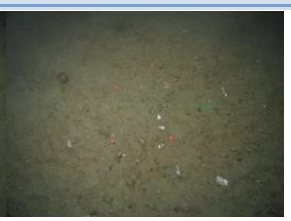
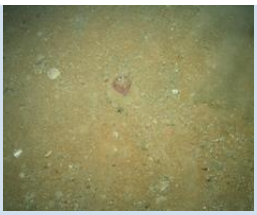
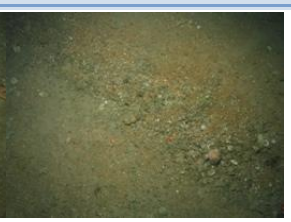
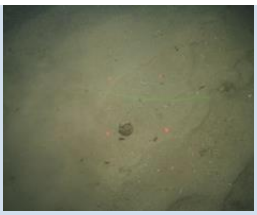
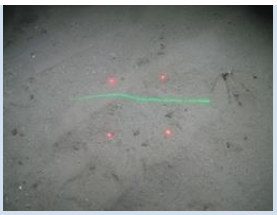
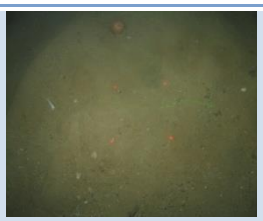
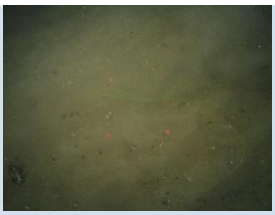
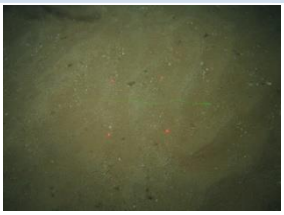
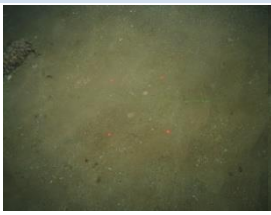
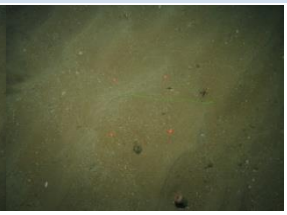
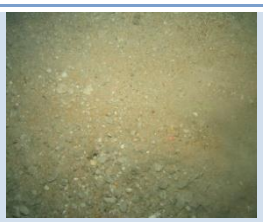
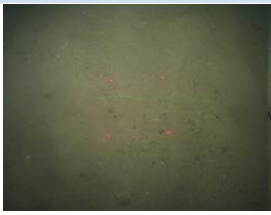
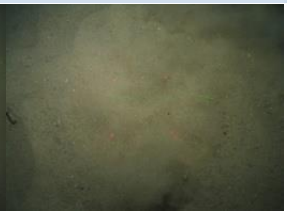
Station	_A1	_A2	_A3	Sample used	BSH
SWDW_CEND0613_AddGT07_STN_368_A1		NA	NA	A1	Sand
SWDW_CEND0613_SO19_STN_370_A1		NA	NA	A1	Sand
SWDW_CEND0613_AddGT09_STN_375_A1		NA	NA	A1	Coarse
SWDW_CEND0613_AddGT10_STN_377_A1		NA	NA	A1	Sand

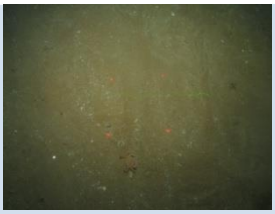
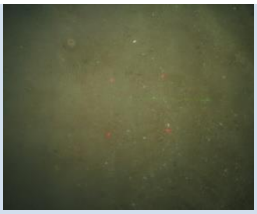
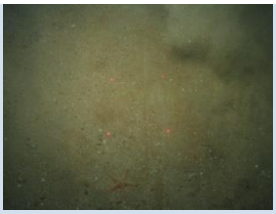
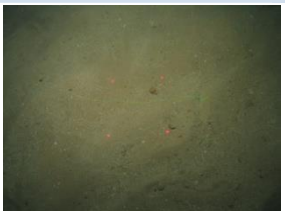
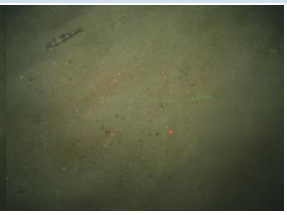
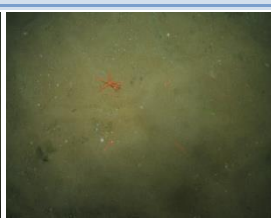
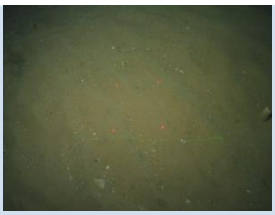
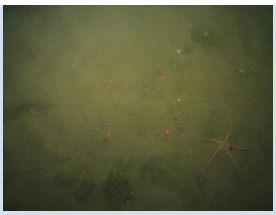
Table 3. Representative still images from camera sledges.

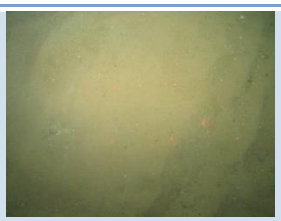
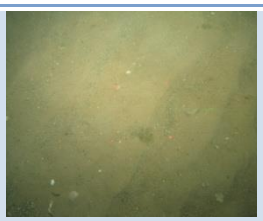
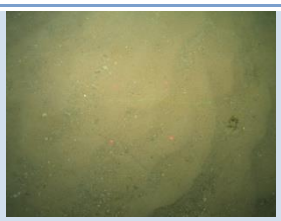
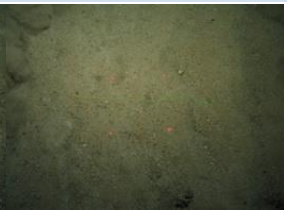
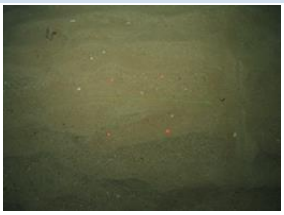
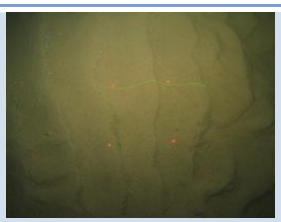
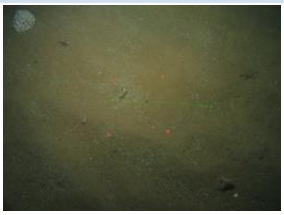
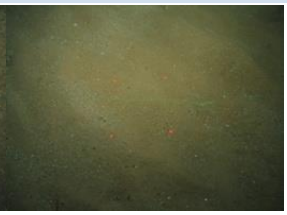
Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_GT27_STN_004_A1				5,10,13
SWDW_CEND0613_S022_STN_006_A1				4,7,12
SWDW_CEND0613_S012_STN_011_A1				9,11,13
SWDW_CEND0613_GT40_STN_014_A1				7,12,13
SWDW_CEND0613_S027_STN_018_A1				3,5,7
SWDW_CEND0613_C02_STN_021_A1				3,6,9
SWDW_CEND0613_S104_STN_025_A1				5,10,11

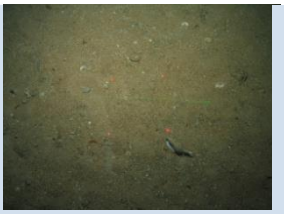
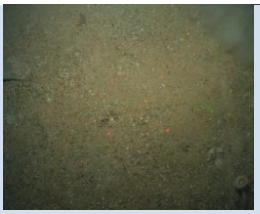
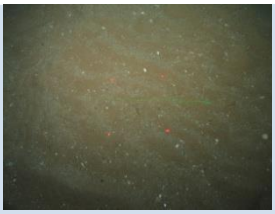
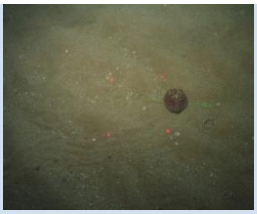
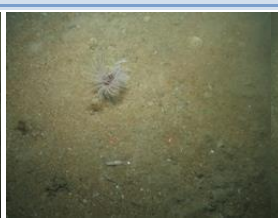
Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_S113_STN_028_A1				2,3, 13
SWDW_CEND0613_S018_STN_031_A1				2,7, 12
SWDW_CEND0613_GT41_STN_034_A1				4,11,12
SWDW_CEND0613_S112_STN_037_A1				4,11,14
SWDW_CEND0613_S103_STN_040_A1				4,8,12
SWDW_CEND0613_S084_STN_044_A1				2,5, 12
SWDW_CEND0613_S096_STN_047_A1				3,8, 14

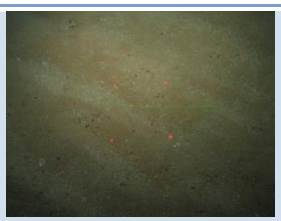
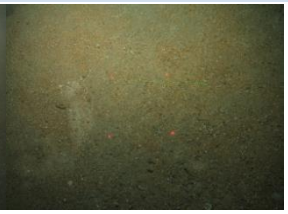
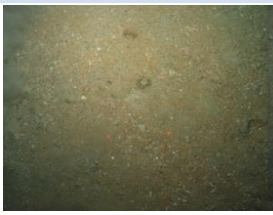
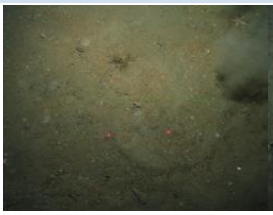
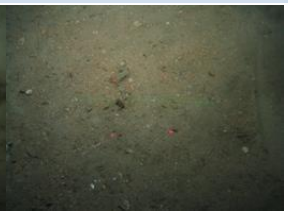
Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_GT39_STN_054_A1				2,8,11
SWDW_CEND0613_S013_STN_058_A1				4,8,11
SWDW_CEND0613_S100_STN_063_A1				8,11,13
SWDW_CEND0613_S080_STN_067_A1				4,9,14
SWDW_CEND0613_S076_STN_068_A1				3,6,12
SWDW_CEND0613_S089_STN_073_A1				2,15,17
SWDW_CEND0613_S069_STN_077_A1				5,15,16

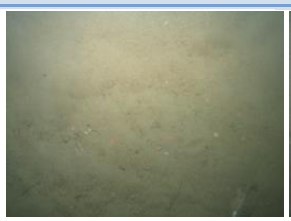
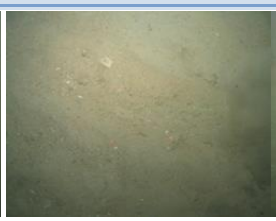
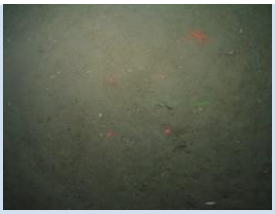
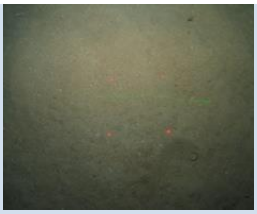
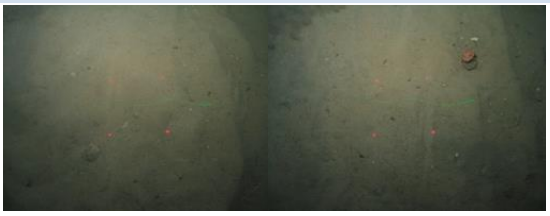
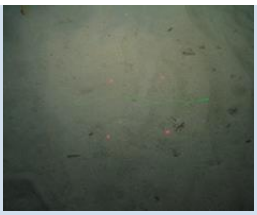
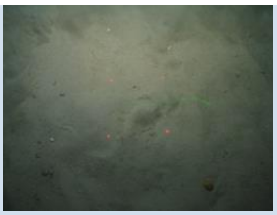
Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_S015_STN_082_A1				3, 4, 7
SWDW_CEND0613_C31_STN_085_A1				6, 10, 16
SWDW_CEND0613_S093_STN_089_A1				3, 5, 14
SWDW_CEND0613_S086_STN_093_A1				5, 14, 16
SWDW_CEND0613_S046_STN_097_A1				5, 9, 10
SWDW_CEND0613_S077_STN_102_A1				6,13,17
SWDW_CEND0613_S066_STN_106_A1				2,7,11

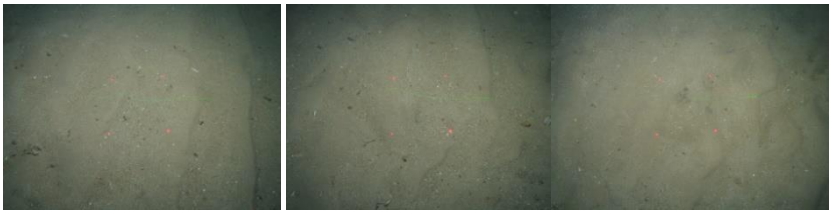
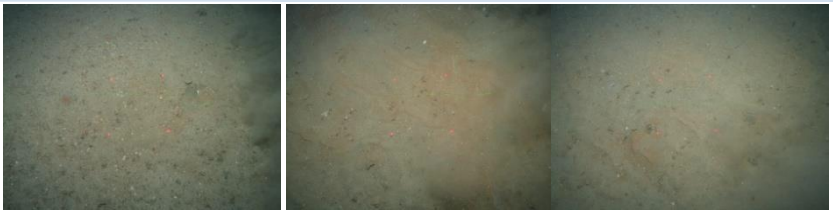
Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_S016_STN_111_A1				3,8,14
SWDW_CEND0613_S073_STN_122_A1				10, 11, 12
SWDW_CEND0613_S042_STN_127_A1				6,11,14
SWDW_CEND0613_C17_STN_130_A1				6, 15, 20
SWDW_CEND0613_C10_STN_139_A1				2,9,13
SWDW_CEND0613_GT05_STN_149_A1				3, 7, 11
SWDW_CEND0613_GT08_STN_152_A1				6, 8, 13

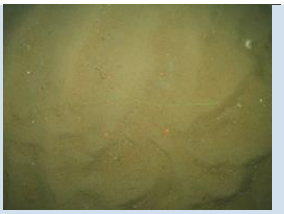
Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_GT09_STN_159_A1				5,11,16
SWDW_CEND0613_GT17_STN_165_A1				3,9,14
SWDW_CEND0613_S002_STN_175_A1				3,12,17
SWDW_CEND0613_S005_STN_178_A1				3,10,15
SWDW_CEND0613_C05_STN_184_A2				3,10,14
SWDW_CEND0613_GT24_STN_189_A2				5,13,18
SWDW_CEND0613_C13_STN_194_A1				3,10,18

Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_S039_STN_198_A1				3,9,14
SWDW_CEND0613_S033_STN_202_A1				4,7,17
SWDW_CEND0613_GT28_STN_207_A1				4,20,27
SWDW_CEND0613_GT34_STN_211_A1				9,12,19
SWDW_CEND0613_S047_STN_219_A1				5,8,17
SWDW_CEND0613_S037_STN_223_A1				3,8,14
SWDW_CEND0613_C18_STN_226_A1				4,11,16

Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_S050_STN_231_A1				5, 10, 18
SWDW_CEND0613_C22_STN_234_A1				4,9,16
SWDW_CEND0613_C27_STN_240_A1				2,10,14
SWDW_CEND0613_CS058_STN_244_A1				3,8,14
SWDW_CEND0613_C30_STN_249_A2				5,11,16
SWDW_CEND0613_S053_STN_252_A1				5,10,12
SWDW_CEND0613_S056_STN_257_A1				3, 10, 19

Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_C36_STN_260_A1				4, 15, 22
SWDW_CEND0613_C37_STN_263_A1				4,7,14
SWDW_CEND0613_AddGT01_STN_267_A1				4,8,18
SWDW_CEND0613_AddGT02_STN 268_A1				4, 9, 19
SWDW_CEND0613_AddGT03_STN_271_A1				2,10,17
SWDW_CEND0613_AddGT06_STN_363_A1				4,7,16
SWDW_CEND0613_AddGT08_STN_365_A1				3,8,14

Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_AddGT05_STN_367_A1				3,9,15
SWDW_CEND0613_AddGT07_STN_369_A1				2,10,15
SWDW_CEND0613_S019_STN_371_A1				2,8,15
SWDW_CEND0613_AddGT09_STN_375_A1				2,9,15
SWDW_CEND0613_AddGT10_STN_377_A1				3,8,14
SWDW_CEND0613_SO53toSO55_STN_378_A1				5,22,36
SWDW_CEND0613_SO52_STN_379_A1				3,18,35

Station	Representative image 1	Representative image 2	Representative image 3	Image number
SWDW_CEND0613_ GT15_STN_380_A1				5,8,12
SWDW_CEND0613_ GT13_STN_381_A1				2,13,15
SWDW_CEND0613_ GT20_STN_382_A1				2,8,18

5 Annexes

5.1 RV Cefas Endeavour

Port of registry	Lowestoft
Length OA	73.00 m (excluding stern roller)
Length extreme	73.916 m
Breadth (MLD)	15.80 m
Depth (MLD)	8.20 m
Design draft	5.00 m
Deep draught	5.50 m
LBP	66.50 m
Gross tonnage	2983 tonnes
Net register tonnage	894 tonnes
Net lightship	2436 tonnes
Deadweight @ 5.00 m	784 tonnes
Deadweight @ 5.50 m	1244 tonnes
Displacement @ 5.00 m	3210 tonnes
Displacement @ 5.50 m	3680 tonnes
Builder	Ferguson Shipbuilders Limited, Port Glasgow
Commissioned	2003
Communications	In port BT Tel. Cellphone Voice/Fax/Data Radio TELEX Inmarsat C Fleet 77 (Inmarsat F) and VSAT (eutelsat) internet access
Endurance	42 days
Complement	En-suite accommodation for 16 crew and 19 scientists with dedicated hospital facility
Propulsion System	AC/DC Diesel Electric 3 x diesel electric AC generators, individually raft mounted 2 x tandom electric DC motors Single screw
Power generation	3240 Kw
Power propulsion	2230 Kw
Thrusters	Bow thruster (flush mounted azimuthing) Stern thruster (tunnel)
Trial speed	14.4 knots
Bollard pull	29 tonnes
Call sign	VQHF3
Official number	906938
MMSI	235005270
Lloyds/IMO number	9251107

Side Gantry	7.5 tonne articulated side A-frame
Stern Gantry	25 tonne stern A-frame
Winches	3 x cranes 35 tM, heave compensated 2 x trawl winches 2 x drum winches, (1 double) Double barrel survey winch with motion compensation and slip rings Double barrel survey winch with slip rings Double barrel towing winch with slip rings Side-scan sonar winch with slip rings 3 x Gilson winches (one fitted to stern A-frame)
Transducers/Sea tube	Drop keel to deploy transducers outside the hull boundary layer in addition to hull mounted transducers 1.2 m diameter sea tube/moon-pool
Acoustic equipment	Kongsberg Simrad: HiPAP 500 positioning sonar EK60, 38/120 kHz scientific sounder EA 600, 50/200 kHz scientific sounder Scanmar net mensuration system SH80 high frequency omni- directional sonar EM3002 swathe bathymetry sounder Hull mounted Scanmar fishing computer transducers
Boats	2 x 8m rigid work and rescue boats with suite of navigational equipment deployed on heave-compensated davits
Laboratories	8 networked laboratories designed for optimum flexibility of purpose 4 serviced deck locations for containerised laboratories
Special features	Dynamic positioning system Intering anti-roll system Local Area Network with scientific data management system Ship-wide general information system CCTV
Class	LRS 100A1+LMC UMS SCM CCS ICC IP ES(2) DP(CM) ICE class 2

5.2 Camera Sledge

Flash model: Kongsberg 11-242
Underwater lights – Cefas high power LED strip lights
Video and stills camera settings variable depending on underwater visibility and ambient light levels.

5.3 Positioning Software-Tower

Vessel offsets are defined from the pitch roll centre of the vessel – the Common Reference Point (CRP) used by the Tower CEMAP software to calculate offsets.

5.4 Multibeam Bathymetry

Model: Kongsberg EM2040
Frequency: 300 kHz; swathe width variable running in hi res equidistant mode
Latency correction not determined – 1pps synchronised time system utilised on vessel. Model: Simrad EM2040
Frequency: 200/300/400 kHz, swathe width variable dependent on water depth.

5.5 Metadata

Station metadata for the South-West Deeps (West) rMCZ and the South of the Scilly Isles rMCZ surveys on cruise CEND0613 are provided below. ‘Station Number’ is a sequential event number for the cruise, so changes each time a new gear is used at a location or a new location is sampled. ‘Station Code’ is used to identify the target sampling station. ‘Gear code’ is: MB=Multibeam; HC=HamCam (0.1m^2); HG= Hamon grab (0.1m^2); CS=Camera sledge. Electronic outputs from the meta-database are available in the supporting documentation.

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
10/05/2013			S024	1	HG	A1	49.48835	-9.03528	S W Deeps West 2013	Side Gantry	Sand
10/05/2013			S023	2	HG	A1	49.46643	-9.00172	S W Deeps West 2013	Side Gantry	Sand
10/05/2013			GT37	3	HG	A1	49.46098	-9.04334	S W Deeps West 2013	Side Gantry	Sand
10/05/2013	12:41	12:51	GT37	4	CS	A1	49.46096	-9.04440	S W Deeps West 2013	Stern Gantry	Subtidal sand
10/05/2013			S022	5	HC	A1	49.44411	-8.96995	S W Deeps West 2013	Side Gantry	Sand
10/05/2013	14:22	14:33	S022	6	CS	A1	49.44403	-8.97135	S W Deeps West 2013	Stern Gantry	Subtidal sand
10/05/2013			S021	7	HC	A1	49.43361	-9.02108	S W Deeps West 2013	Side Gantry	Sand
10/05/2013			S025	8	HC	A2	49.42345	-8.93725	S W Deeps West 2013	Side Gantry	Sand
10/05/2013			S020	9	HC	A3	49.41209	-8.98855	S W Deeps West 2013	Side Gantry	Sand
10/05/2013			S012	10	HC	A1	49.40154	-9.04018	S W Deeps West 2013	Side Gantry	Sand
10/05/2013	19:10	19:22	S012	11	CS	A1	49.40129	-9.04055	S W Deeps West 2013	Stern Gantry	Subtidal sand
10/05/2013			S011	12	HC	A1	49.38049	-9.00529	S W Deeps West 2013	Side Gantry	Sand
10/05/2013			GT40	13	HC	A1	49.39750	-8.94628	S W Deeps West 2013	Side Gantry	Sand
10/05/2013	21:26	21:36	GT40	14	CS	A1	49.39737	-8.94624	S W Deeps West 2013	Stern Gantry	Subtidal sand
10/05/2013			S026	16	HC	A1	49.40157	-8.90406	S W Deeps West 2013	Side Gantry	Sand
10/05/2013			S027	17	HC	A1	49.38036	-8.87076	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	00:31	00:41	S027	18	CS	A1	49.38043	-8.87008	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			C02	20	HC	A1	49.35976	-8.97228	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	03:00	03:11	C02	21	CS	A1	49.35965	-8.97310	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			GT36	22	HC	A1	49.35384	-9.01469	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S098	23	HC	A1	49.29508	-9.14404	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S104	24	HC	A1	49.30552	-9.09212	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	06:06	06:16	S104	25	CS	A1	49.30556	-9.09347	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			S108	26	HC	A1	49.31618	-9.04215	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S113	27	HC	A1	49.32706	-8.99171	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	08:10	08:20	S113	28	CS	A1	49.32690	-8.99199	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			C01	29	HC	A1	49.33705	-8.94039	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S018	30	HC	A1	49.34840	-8.88993	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	10:16	10:27	S018	31	CS	A1	49.34900	-8.89007	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			S028	32	HC	A3	49.35803	-8.84027	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			GT41	33	HC	A1	49.33416	-8.84933	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	12:46	12:57	GT41	34	CS	A1	49.33414	-8.85006	S W Deeps West 2013	Stern Gantry	Subtidal sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
11/05/2013			S118	35	HC	A1	49.31614	-8.90852	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S112	36	HC	A1	49.30481	-8.95964	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	14:32	14:43	S112	37	CS	A1	49.30485	-8.96023	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			S107	38	HC	A1	49.29465	-9.01105	S W Deeps West 2013	Stern Gantry	Sand
11/05/2013			S103	39	HC	A1	49.28333	-9.06141	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	17:11	17:22	S103	40	CS	A1	49.28337	-9.06157	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			S097	41	HC	A1	49.27222	-9.11182	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S092	42	HC	A3	49.26161	-9.16131	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S084	43	HC	A3	49.22926	-9.18221	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	20:42	20:52	S084	44	CS	A1	49.22887	-9.18186	S W Deeps West 2013	Stern Gantry	Subtidal sand
11/05/2013			S091	45	HC	A1	49.23947	-9.13088	S W Deeps West 2013	Side Gantry	Sand
11/05/2013			S096	46	HC	A1	49.25133	-9.07975	S W Deeps West 2013	Side Gantry	Sand
11/05/2013	23:18	23:29	S096	47	CS	A1	49.25183	-9.08022	S W Deeps West 2013	Stern Gantry	Subtidal sand
12/05/2013			S102	48	HC	A1	49.27203	-9.04550	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S101	49	HC	A1	49.26203	-9.02908	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S106	50	HC	A1	49.27338	-8.97794	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			GT38	52	HC	A1	49.26862	-8.95245	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			GT39	53	HC	A1	49.29065	-8.91786	S W Deeps West 2013	Side Gantry	Sand
12/05/2013	03:40	03:50	GT39	54	CS	A1	49.29054	-8.91833	S W Deeps West 2013	Stern Gantry	Subtidal sand
12/05/2013			S117	55	HC	A1	49.29491	-8.87487	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S017	56	HC	A1	49.30535	-8.82482	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S013	57	HC	A1	49.28339	-8.79160	S W Deeps West 2013	Side Gantry	Sand
12/05/2013	06:01	06:12	S013	58	CS	A1	49.28325	-8.79158	S W Deeps West 2013	Stern Gantry	Subtidal sand
12/05/2013			S109	59	HC	A1	49.27100	-8.84060	S W Deeps West 2013	Side Gantry	Coarse
12/05/2013			S110	60	HC	A1	49.26258	-8.89406	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S105	61	HC	A1	49.25114	-8.94628	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S100	62	HC	A1	49.24106	-8.99537	S W Deeps West 2013	Side Gantry	Coarse
12/05/2013	09:33	09:44	S100	63	CS	A1	49.24119	-8.99525	S W Deeps West 2013	Stern Gantry	Subtidal mixed
12/05/2013			S095	64	HC	A1	49.22939	-9.04632	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S090	65	HC	A1	49.21901	-9.09761	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S080	66	HC	A1	49.20835	-9.14957	S W Deeps West 2013	Side Gantry	Sand
12/05/2013	12:18	12:29	S080	67	CS	A1	49.20831	-9.14917	S W Deeps West 2013	Stern Gantry	Subtidal sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
12/05/2013	13:26	13:36	S076	68	CS	A1	49.16253	-9.21794	S W Deeps West 2013	Stern Gantry	Subtidal mixed
12/05/2013			S076	69	HC	A1	49.16273	-9.21877	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S085	70	HC	A1	49.17602	-9.16555	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S079	71	HC	A1	49.18767	-9.11576	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S089	72	HC	A2	49.19883	-9.06374	S W Deeps West 2013	Side Gantry	Coarse
12/05/2013	15:57	16:08	S089	73	CS	A1	49.19872	-9.06423	S W Deeps West 2013	Stern Gantry	Subtidal sand
12/05/2013			S094	74	HC	A1	49.20881	-9.01289	S W Deeps West 2013	Side Gantry	Coarse
12/05/2013			S099	75	HC	A1	49.22014	-8.96162	S W Deeps West 2013	Side Gantry	Coarse
12/05/2013			S069	76	HC	A1	49.22838	-8.90971	S W Deeps West 2013	Side Gantry	Coarse
12/05/2013	18:13	18:25	S069	77	CS	A1	49.22859	-8.90942	S W Deeps West 2013	Stern Gantry	Subtidal sand
12/05/2013			S111	78	HC	A1	49.24070	-8.86038	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S114	79	HC	A1	49.25217	-8.81050	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S014	80	HC	A1	49.26253	-8.75841	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			S015	81	HC	A1	49.24584	-8.74380	S W Deeps West 2013	Side Gantry	Coarse
12/05/2013	21:01	21:11	S015	82	CS	A1	49.24611	-8.74397	S W Deeps West 2013	Stern Gantry	Subtidal mixed
12/05/2013			S115	83	HC	A1	49.23019	-8.77685	S W Deeps West 2013	Side Gantry	Sand
12/05/2013			C31	84	HC	A1	49.21550	-8.83496	S W Deeps West 2013	Side Gantry	Sand
12/05/2013	22:47	22:57	C31	85	CS	A1	49.21561	-8.83587	S W Deeps West 2013	Stern Gantry	Subtidal sand
12/05/2013			S068	86	HC	A1	49.20875	-8.87916	S W Deeps West 2013	Side Gantry	Mixed
12/05/2013			S067	87	HC	A1	49.19833	-8.92984	S W Deeps West 2013	Side Gantry	Mixed
13/05/2013			S093	88	HC	A1	49.18680	-8.97494	S W Deeps West 2013	Side Gantry	Sand
13/05/2013	00:46	00:56	S093	89	CS	A1	49.18688	-8.97524	S W Deeps West 2013	Stern Gantry	Subtidal mixed
13/05/2013			S088	90	HC	A1	49.17625	-9.03133	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S078	91	HC	A1	49.16499	-9.08227	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S086	92	HC	A1	49.15424	-9.13273	S W Deeps West 2013	Side Gantry	Sand
13/05/2013	02:49	02:59	S086	93	CS	A1	49.15410	-9.13350	S W Deeps West 2013	Stern Gantry	Subtidal sand
13/05/2013			S075	94	HC	A1	49.14384	-9.18436	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S072	95	HC	A1	49.13286	-9.23414	S W Deeps West 2013	Side Gantry	Mixed
13/05/2013			S046	96	HC	A1	49.10116	-9.25322	S W Deeps West 2013	Side Gantry	Sand
13/05/2013	05:20	05:30	S046	97	CS	A1	49.10115	-9.25359	S W Deeps West 2013	Stern Gantry	Subtidal sand
13/05/2013			S071	98	HC	A1	49.11186	-9.20317	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S074	99	HC	A1	49.12071	-9.15331	S W Deeps West 2013	Side Gantry	Sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
13/05/2013			S087	100	HC	A1	49.13158	-9.10124	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S077	101	HC	A1	49.14220	-9.04757	S W Deeps West 2013	Side Gantry	Sand
13/05/2013	08:48	08:59	S077	102	CS	A1	49.14201	-9.04768	S W Deeps West 2013	Stern Gantry	Subtidal sand
13/05/2013			S062	103	HC	A1	49.15559	-8.99935	S W Deeps West 2013	Side Gantry	Coarse
13/05/2013			S064	104	HC	A1	49.16655	-8.94815	S W Deeps West 2013	Side Gantry	Coarse
13/05/2013			S066	105	HC	A1	49.17672	-8.89820	S W Deeps West 2013	Side Gantry	Sand
13/05/2013	11:42	11:55	S066	106	CS	A1	49.17674	-8.89860	S W Deeps West 2013	Stern Gantry	Subtidal sand
13/05/2013			C32	107	HC	A1	49.19526	-8.83420	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			C33	108	HC	A1	49.19628	-8.79935	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S116	109	HC	A1	49.20792	-8.74514	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S016	110	HC	A2	49.20963	-8.67934	S W Deeps West 2013	Side Gantry	Coarse
13/05/2013	14:39	14:50	S016	111	CS	A1	49.20987	-8.68022	S W Deeps West 2013	Stern Gantry	Subtidal coarse
13/05/2013			S029	112	HC	A1	49.18497	-8.71156	S W Deeps West 2013	Side Gantry	Coarse
13/05/2013			C35	113	HC	A1	49.17282	-8.77066	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			C34	114	HC	A1	49.17714	-8.79640	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S057	115	HC	A1	49.16585	-8.81668	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S065	116	HC	A1	49.15515	-8.86598	S W Deeps West 2013	Side Gantry	Coarse
13/05/2013			S063	117	HC	A1	49.14338	-8.91628	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S061	118	HC	A2	49.13364	-8.96663	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S059	119	HC	A1	49.12310	-9.01762	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S081	120	HC	A1	49.11178	-9.06840	S W Deeps West 2013	Side Gantry	Coarse
13/05/2013			S073	121	HC	A1	49.09826	-9.11790	S W Deeps West 2013	Side Gantry	Sand
13/05/2013	21:51	22:02	S073	122	CS	A1	49.09825	-9.11811	S W Deeps West 2013	Stern Gantry	Subtidal sand
13/05/2013			S070	123	HC	A1	49.08865	-9.17153	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S045	124	HC	A1	49.07848	-9.22096	S W Deeps West 2013	Side Gantry	Sand
13/05/2013			S043	125	HC	A2	49.06780	-9.27080	S W Deeps West 2013	Side Gantry	Sand
14/05/2013			S042	126	HC	A1	49.04652	-9.23987	S W Deeps West 2013	Side Gantry	Coarse
14/05/2013	00:46	00:56	S042	127	CS	A1	49.04666	-9.23948	S W Deeps West 2013	Stern Gantry	Subtidal sand
14/05/2013			S044	128	HC	A1	49.05550	-9.18488	S W Deeps West 2013	Side Gantry	Sand
14/05/2013			C17	129	HC	A3	49.07622	-9.12636	S W Deeps West 2013	Side Gantry	Sand
14/05/2013	02:53	03:04	C17	130	CS	A1	49.07608	-9.12742	S W Deeps West 2013	Stern Gantry	Subtidal sand
14/05/2013			CTD01	132	CTD	A1	49.10387	-9.11126	S W Deeps West 2013	Side Gantry	

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
14/05/2013	21:23	22:11	BoxA	133	MB2	21	49.30500	-8.90080	S W Deeps West 2013	GPS	
14/05/2013	19:00	19:47	BoxA	133	MB2	12	49.25090	-8.82310	S W Deeps West 2013	GPS	
14/05/2013	00:07	00:54	BoxA	133	MB2	30	49.25010	-8.81050	S W Deeps West 2013	GPS	
14/05/2013	16:51	17:32	BoxA	133	MB2	03	49.24790	-8.82890	S W Deeps West 2013	GPS	
14/05/2013	07:15	08:07	BoxA	133	MB2	57	49.26350	-8.80320	S W Deeps West 2013	GPS	
14/05/2013	02:49	03:38	BoxA	133	MB2	39	49.25900	-8.81100	S W Deeps West 2013	GPS	
14/05/2013	04:57	05:41	BoxA	133	MB2	48	49.26100	-8.80700	S W Deeps West 2013	GPS	
15/05/2013			CTD02	134	CTD	A1	49.28024	-9.10178	S W Deeps West 2013	Side Gantry	
15/05/2013	12:29	13:30	Box B	135	SS7	04	49.23383	-9.08300	S W Deeps West 2013	GPS	
15/05/2013	12:29	13:30	Box B	135	MB2	04	49.28000	-9.08300	S W Deeps West 2013	GPS	
15/05/2013			S007	136	HC	A1	48.85110	-9.38303	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			S006	137	HC	A2	48.85259	-9.34752	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			C10	138	HC	A2	48.87001	-9.35255	S W Deeps West 2013	Side Gantry	Sand
15/05/2013	19:37	19:48	C10	139	CS	A1	48.87017	-9.35259	S W Deeps West 2013	Stern Gantry	Subtidal sand
15/05/2013			C09	140	HC	A1	48.88058	-9.36843	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			C08	141	HC	A2	48.89124	-9.38555	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			S031	142	HC	A2	48.91251	-9.38420	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			GT01	143	HC	A1	48.93564	-9.38832	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			GT03	144	HC	A1	48.94445	-9.38480	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			GT02	145	HC	A1	48.95067	-9.39424	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			GT04	146	HC	A1	48.95935	-9.39043	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			GT06	147	HC	A1	48.96806	-9.38703	S W Deeps West 2013	Side Gantry	Sand
15/05/2013			GT05	148	HC	A1	48.97426	-9.39666	S W Deeps West 2013	Side Gantry	Sand
16/05/2013	00:06	00:16	GT05	149	CS	A1	48.97465	-9.39721	S W Deeps West 2013	Stern Gantry	Subtidal sand
16/05/2013			GT07	150	HC	A2	48.98302	-9.39328	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT08	151	HC	A1	48.99804	-9.39937	S W Deeps West 2013	Side Gantry	Sand
16/05/2013	01:28	01:38	GT08	152	CS	A1	48.99819	-9.39953	S W Deeps West 2013	Stern Gantry	Subtidal sand
16/05/2013			GT11	153	HC	A1	48.99162	-9.38969	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT14	154	HC	A1	48.98561	-9.38009	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT16	155	HC	A1	48.97921	-9.37023	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT13	156	HC	A1	48.97058	-9.37406	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT10	157	HC	A1	48.96190	-9.37785	S W Deeps West 2013	Side Gantry	Sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
16/05/2013			GT09	158	HC	A1	48.94693	-9.37127	S W Deeps West 2013	Side Gantry	Sand
16/05/2013	04:30	04:40	GT09	159	CS	A1	48.94711	-9.37175	S W Deeps West 2013	Stern Gantry	Subtidal coarse
16/05/2013			GT12	160	HC	A1	48.95572	-9.36738	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT15	161	HC	A1	48.96429	-9.36418	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT18	162	HC	A1	48.97299	-9.36013	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT19	163	HC	A1	48.98814	-9.36652	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT17	164	HC	A1	48.99417	-9.37607	S W Deeps West 2013	Side Gantry	Sand
16/05/2013	07:22	07:33	GT17	165	CS	A1	48.99408	-9.37604	S W Deeps West 2013	Stern Gantry	Subtidal sand
16/05/2013			GT20	166	HC	A1	48.99054	-9.35300	S W Deeps West 2013	Side Gantry	Coarse
16/05/2013			GT22	167	HC	A1	48.99907	-9.34967	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT23	168	HC	A1	48.99269	-9.33988	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT21	169	HC	A1	48.98406	-9.34333	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			S032	170	HC	A3	48.93448	-9.35010	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C07	171	HC	A1	48.91226	-9.35262	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			S004	172	HC	A1	48.88432	-9.33066	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			S003	173	HC	A1	48.86342	-9.29589	S W Deeps West 2013	Side Gantry	Coarse
16/05/2013			S002	174	HC	A1	48.83809	-9.25689	S W Deeps West 2013	Side Gantry	Sand
16/05/2013	13:36	13:49	S002	175	CS	A1	48.83810	-9.25804	S W Deeps West 2013	Stern Gantry	Subtidal coarse, subtidal sand
16/05/2013			S001	176	HC	A1	48.87259	-9.24315	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			S005	177	HC	A1	48.89502	-9.28067	S W Deeps West 2013	Side Gantry	Sand
16/05/2013	15:09	15:20	S005	178	CS	A1	48.89539	-9.28176	S W Deeps West 2013	Stern Gantry	Subtidal sand
16/05/2013			S040	179	HC	A1	48.91661	-9.31289	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C06	180	HC	A1	48.93464	-9.31757	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C03	181	HC	A1	48.95633	-9.31529	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C04	182	HC	A1	48.97848	-9.28211	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C05	183	HC	A1	48.95648	-9.28405	S W Deeps West 2013	Side Gantry	Sand
16/05/2013	19:03	19:13	C05	184	CS	A2	48.95501	-9.28499	S W Deeps West 2013	Stern Gantry	Subtidal sand
16/05/2013	18:38	18:49	C05	184	CS	A1	0.00000	0.00000	S W Deeps West 2013	Stern Gantry	Subtidal sand
16/05/2013			S041	185	HC	A1	48.92604	-9.26492	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C12	186	HC	A1	48.93509	-9.24912	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C14	187	HC	A1	48.91346	-9.21817	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			GT24	188	HC	A1	48.88274	-9.18955	S W Deeps West 2013	Side Gantry	Sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
16/05/2013	21:44	21:54	GT24	189	CS	A1	48.88291	-9.18937	S W Deeps West 2013	Stern Gantry	Subtidal sand
16/05/2013			GT25	190	HC	A1	48.88765	-9.16270	S W Deeps West 2013	Side Gantry	Coarse
16/05/2013			GT26	191	HC	A1	48.90449	-9.15588	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C16	192	HC	A1	48.91277	-9.18316	S W Deeps West 2013	Side Gantry	Sand
16/05/2013			C13	193	HC	A1	48.93599	-9.21504	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	00:05	00:15	C13	194	CS	A1	48.93629	-9.21522	S W Deeps West 2013	Stern Gantry	Subtidal sand
17/05/2013			C11	195	HC	A1	48.95627	-9.24999	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			S034	196	HC	A1	48.99336	-9.22484	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			S039	197	HC	A1	49.01386	-9.25711	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	02:07	02:18	S039	198	CS	A1	49.01384	-9.25699	S W Deeps West 2013	Stern Gantry	Subtidal sand
17/05/2013			S036	199	HC	A1	49.02519	-9.20730	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			S035	200	HC	A1	49.00337	-9.17391	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			S033	201	HC	A1	48.97134	-9.19300	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	04:16	04:27	S033	202	CS	A1	48.97132	-9.19328	S W Deeps West 2013	Stern Gantry	Subtidal sand
17/05/2013			C15	203	HC	A1	48.93590	-9.18426	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			GT27	205	HC	A1	48.92222	-9.14866	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			GT28	206	HC	A1	48.90928	-9.12884	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	07:38	08:57	GT28	207	CS	A1	48.91070	-9.12894	S W Deeps West 2013	Stern Gantry	Subtidal sand
17/05/2013			GT30	208	HC	A1	48.92663	-9.12228	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			GT32	209	HC	A1	48.93110	-9.09519	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			GT34	210	HC	A1	48.94860	-9.08821	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	09:41	09:53	GT34	211	CS	A1	48.94938	-9.08751	S W Deeps West 2013	Stern Gantry	Subtidal sand, subtidal coarse
17/05/2013			GT31	212	HC	A1	48.94383	-9.11472	S W Deeps West 2013	Side Gantry	Coarse
17/05/2013			GT29	213	HC	A1	48.93928	-9.14135	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			S009	214	HC	A1	48.95069	-9.15979	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			S008	215	HC	A1	48.98142	-9.14551	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			GT33	216	HC	A1	48.96087	-9.10777	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			GT35	217	HC	A1	48.96606	-9.08111	S W Deeps West 2013	Side Gantry	Coarse
17/05/2013			S047	218	HC	A1	48.96959	-9.05444	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	14:23	14:34	S047	219	CS	A1	48.96949	-9.05461	S W Deeps West 2013	Stern Gantry	Subtidal sand
17/05/2013			S010	220	HC	A1	48.99221	-9.09206	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			C23	221	HC	A1	49.01065	-9.09664	S W Deeps West 2013	Side Gantry	Sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
17/05/2013			S037	222	HC	A1	49.01400	-9.12406	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	16:53	17:06	S037	223	CS	A1	49.01471	-9.12396	S W Deeps West 2013	Stern Gantry	Subtidal coarse
17/05/2013			S038	224	HG	A2	49.03611	-9.15537	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			C18	225	HG	A1	49.05436	-9.12657	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	19:09	19:20	C18	226	CS	A1	49.05490	-9.12745	S W Deeps West 2013	Stern Gantry	Subtidal sand
17/05/2013			C19	227	HG	A1	49.07500	-9.09541	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			C20	228	HG	A1	49.05272	-9.09530	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			C21	229	HG	A1	49.03157	-9.09680	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			S050	230	HG	A1	49.00286	-9.03835	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	22:13	22:24	S050	231	CS	A1	49.00306	-9.03843	S W Deeps West 2013	Stern Gantry	Subtidal sand, subtidal coarse
17/05/2013			C24	232	HG	A1	49.03249	-9.06191	S W Deeps West 2013	Side Gantry	Sand
17/05/2013			C22	233	HG	A1	49.05611	-9.05927	S W Deeps West 2013	Side Gantry	Sand
17/05/2013	23:51	00:02	C22	234	CS	A1	49.05641	-9.05944	S W Deeps West 2013	Stern Gantry	Subtidal sand
18/05/2013			S082	235	HG	A1	49.08971	-9.03650	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			C25	236	HG	A1	49.05455	-9.02782	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			S048	237	HG	A1	49.03635	-9.02277	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			S051	238	HG	A1	49.01144	-8.98755	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			C27	239	HG	A1	49.03434	-8.99333	S W Deeps West 2013	Side Gantry	Sand
18/05/2013	02:56	03:07	C27	240	CS	A1	49.03471	-8.99293	S W Deeps West 2013	Stern Gantry	Subtidal sand, subtidal coarse
18/05/2013			C26	241	HG	A1	49.05435	-8.99339	S W Deeps West 2013	Side Gantry	Coarse
18/05/2013			S083	242	HG	A1	49.06897	-9.00440	S W Deeps West 2013	Side Gantry	Mixed
18/05/2013			S058	243	HG	A1	49.10164	-8.98529	S W Deeps West 2013	Side Gantry	Coarse
18/05/2013	05:06	05:17	S058	244	CS	A1	49.10202	-8.98514	S W Deeps West 2013	Stern Gantry	Subtidal mixed
18/05/2013			S049	245	HG	A1	49.07935	-8.95406	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			C28	246	HG	A1	49.05640	-8.96075	S W Deeps West 2013	Side Gantry	Coarse
18/05/2013			C29	247	HG	A1	49.03485	-8.96476	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			C30	248	HG	A1	49.03865	-8.93857	S W Deeps West 2013	Side Gantry	Sand
18/05/2013	08:23	08:34	C30	249	CS	A2	49.03910	-8.93964	S W Deeps West 2013	Stern Gantry	Subtidal coarse
18/05/2013			S052	250	HG	A1	49.05707	-8.91827	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			S053	251	HG	A1	49.09142	-8.90424	S W Deeps West 2013	Side Gantry	Sand
18/05/2013	10:42	10:53	S053	252	CS	A1	49.09165	-8.90462	S W Deeps West 2013	Stern Gantry	Subtidal sand
18/05/2013			S060	253	HG	A1	49.11165	-8.93616	S W Deeps West 2013	Side Gantry	Sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
18/05/2013			S054	254	HG	A1	49.12214	-8.88509	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			S055	255	HG	A3	49.10122	-8.84988	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			S056	256	HG	A1	49.13354	-8.83518	S W Deeps West 2013	Side Gantry	Sand
18/05/2013	13:50	14:01	S056	257	CS	A1	49.13383	-8.83539	S W Deeps West 2013	Stern Gantry	Subtidal sand
18/05/2013			S030	258	HG	A1	49.14057	-8.78591	S W Deeps West 2013	Side Gantry	Coarse
18/05/2013			C36	259	HG	A1	49.15475	-8.77751	S W Deeps West 2013	Side Gantry	Coarse
18/05/2013	15:15	15:27	C36	260	CS	A1	49.15493	-8.77760	S W Deeps West 2013	Stern Gantry	Subtidal coarse
18/05/2013			C38	261	HG	A1	49.14147	-8.75888	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			C37	262	HG	A1	49.14147	-8.75888	S W Deeps West 2013	Side Gantry	Sand
18/05/2013	17:24	17:35	C37	263	CS	A1	49.15999	-8.75027	S W Deeps West 2013	Stern Gantry	Subtidal sand, subtidal coarse
18/05/2013			C39	264	HG	A1	49.15942	-8.72541	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			AddGT04	265	HG	A1	49.25633	-8.82325	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			AddGT01	266	HG	A1	49.26563	-8.81043	S W Deeps West 2013	Side Gantry	Sand
18/05/2013	19:54	20:05	AddGT01	267	CS	A1	49.26554	-8.81043	S W Deeps West 2013	Stern Gantry	Subtidal sand
18/05/2013	20:53	21:04	AddGT02	268	CS	A1	49.28571	-8.84295	S W Deeps West 2013	Stern Gantry	Subtidal sand
18/05/2013			AddGT02	269	HG	A1	49.28587	-8.84302	S W Deeps West 2013	Side Gantry	Sand
18/05/2013			AddGT03	270	HG	A1	49.29684	-8.89768	S W Deeps West 2013	Side Gantry	Sand
18/05/2013	22:18	22:29	AddGT03	271	CS	A1	49.29699	-8.89805	S W Deeps West 2013	Stern Gantry	Subtidal sand
19/05/2013			CTD01	272	CTD	A1	49.74352	-6.11468	S Isles of Scilly 2013	Side Gantry	
19/05/2013	16:16	17:25	SISSMB	273	MB2	16	49.73370	-6.12770	S Isles of Scilly 2013	GPS	
19/05/2013	08:43	09:51	SISSMB	273	MB2	3	49.73925	-6.29693	S Isles of Scilly 2013	GPS	
19/05/2013	21:33	22:38	SISSMB	273	MB2	203	49.64949	-6.29410	S Isles of Scilly 2013	GPS	
19/05/2013	10:53	11:58	SISSMB	273	MB2	221	49.64127	-6.12717	S Isles of Scilly 2013	GPS	
19/05/2013	14:27	15:33	SISSMB	273	MB2	215	49.64406	-6.29142	S Isles of Scilly 2013	GPS	
19/05/2013	12:42	13:47	SISSMB	273	MB2	9	49.73591	-6.13043	S Isles of Scilly 2013	GPS	
19/05/2013	19:42	20:50	SISSMB	273	MB2	22	49.73071	-6.29528	S Isles of Scilly 2013	GPS	
19/05/2013	23:16	00:25	SISSMB	273	MB2	28	49.72797	-6.29550	S Isles of Scilly 2013	GPS	
19/05/2013	05:39	06:39	SISSMB	273	MB2	88	49.70101	-6.29644	S Isles of Scilly 2013	GPS	
19/05/2013	02:23	03:42	SISSMB	273	MB2	34	49.72520	-6.12766	S Isles of Scilly 2013	GPS	
19/05/2013	00:55	01:59	SISSMB	273	MB2	197	49.65202	-6.29467	S Isles of Scilly 2013	GPS	
19/05/2013	04:15	05:13	SISSMB	273	MB2	191	49.65474	-6.12833	S Isles of Scilly 2013	GPS	
19/05/2013	18:04	19:01	SISSMB	273	MB2	209	49.64661	-6.29407	S Isles of Scilly 2013	GPS	

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
20/05/2013			CTD02	274	CTD	A1	49.65521	-6.32195	S Isles of Scilly 2013	Side Gantry	
20/05/2013	17:56	18:56	SISSMB	275	MB2	62	49.71255	-6.12912	S Isles of Scilly 2013	GPS	
20/05/2013	22:28	23:33	SISSMB	275	MB2	131	49.68167	-6.29432	S Isles of Scilly 2013	GPS	
20/05/2013	12:33	13:36	SISSMB	275	MB2	48	49.71896	-6.29554	S Isles of Scilly 2013	GPS	
20/05/2013	20:44	21:52	SISSMB	275	MB2	69	49.70974	-6.29551	S Isles of Scilly 2013	GPS	
20/05/2013	09:21	10:31	SISSMB	275	MB2	166	49.66598	-6.12730	S Isles of Scilly 2013	GPS	
20/05/2013	08:04	09:08	SISSMB	275	MB2	159	49.66919	-6.12720	S Isles of Scilly 2013	GPS	
20/05/2013	19:16	20:27	SISSMB	275	MB2	124	49.68482	-6.29383	S Isles of Scilly 2013	GPS	
20/05/2013	07:35	08:42	SISSMB	275	MB2	184	49.65780	-6.29631	S Isles of Scilly 2013	GPS	
20/05/2013	23:50	00:55	SISSMB	275	MB2	76	49.70662	-6.12825	S Isles of Scilly 2013	GPS	
20/05/2013	06:54	07:56	SISSMB	275	MB2	152	49.67218	-6.12775	S Isles of Scilly 2013	GPS	
20/05/2013	16:36	17:40	SISSMB	275	MB2	117	49.68786	-6.12793	S Isles of Scilly 2013	GPS	
20/05/2013	10:40	11:41	SISSMB	275	MB2	172	49.66309	-6.29518	S Isles of Scilly 2013	GPS	
20/05/2013	03:30	04:30	SISSMB	275	MB2	95	49.69765	-6.29434	S Isles of Scilly 2013	GPS	
20/05/2013	05:50	06:49	SISSMB	275	MB2	145	49.67537	-6.12651	S Isles of Scilly 2013	GPS	
20/05/2013	04:38	05:35	SISSMB	275	MB2	102	49.69472	-6.12810	S Isles of Scilly 2013	GPS	
20/05/2013	01:11	02:04	SISSMB	275	MB2	138	49.67867	-6.29487	S Isles of Scilly 2013	GPS	
20/05/2013	02:23	03:17	SISSMB	275	MB2	82	49.70379	-6.29493	S Isles of Scilly 2013	GPS	
20/05/2013	12:05	13:07	SISSMB	275	MB2	106	49.69297	-6.12866	S Isles of Scilly 2013	GPS	
20/05/2013	13:58	15:04	SISSMB	275	MB2	110	49.69115	-6.12675	S Isles of Scilly 2013	GPS	
20/05/2013	15:22	16:20	SISSMB	275	MB2	55	49.71388	-6.29638	S Isles of Scilly 2013	GPS	
20/05/2013	09:17	10:29	SISSMB	275	MB2	41	49.72282	-6.29430	S Isles of Scilly 2013	GPS	
20/05/2013	10:57	12:02	SISSMB	275	MB2	177	49.66100	-6.12759	S Isles of Scilly 2013	GPS	
21/05/2013	14:42	14:54	SISS32	277	CS	A2	49.73848	-6.28744	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
21/05/2013	15:28	15:42	SISS54	278	CS	A1	49.73818	-6.29203	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
21/05/2013	17:16	17:27	SISS53	279	CS	A1	49.72149	-6.29368	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
21/05/2013			SISS53	280	HC	A1	49.72147	-6.29357	S Isles of Scilly 2013	Side Gantry	Sand
21/05/2013			SISS15	281	HC	A1	49.69056	-6.28277	S Isles of Scilly 2013	Side Gantry	Mixed
21/05/2013			SISS08	282	HC	A1	49.67357	-6.29142	S Isles of Scilly 2013	Side Gantry	Sand
21/05/2013			SISS35	283	HC	A2	49.64988	-6.29033	S Isles of Scilly 2013	Side Gantry	Mixed
21/05/2013			SISS33	284	HC	A1	49.64130	-6.29472	S Isles of Scilly 2013	Side Gantry	Mixed
21/05/2013			SISS02	285	HC	A1	49.64351	-6.28112	S Isles of Scilly 2013	Side Gantry	Coarse

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
21/05/2013			SISS06	286	HC	A1	49.66069	-6.27249	S Isles of Scilly 2013	Side Gantry	Mixed
21/05/2013			SISS10	287	HC	A1	49.67760	-6.26414	S Isles of Scilly 2013	Stern Gantry	Sand
21/05/2013	21:17	21:27	SISS10	288	CS	A1	49.67805	-6.26473	S Isles of Scilly 2013	Stern Gantry	Subtidal sand, subtidal coarse
21/05/2013			SISS21	289	HC	A1	49.70784	-6.27396	S Isles of Scilly 2013	Stern Gantry	Coarse
21/05/2013	22:43	22:54	SISS21	290	CS	A1	49.70813	-6.27445	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
21/05/2013			SISS27	291	HC	A1	49.72492	-6.26620	S Isles of Scilly 2013	Stern Gantry	Mixed
21/05/2013			SISS29	292	HC	A1	49.72900	-6.23916	S Isles of Scilly 2013	Side Gantry	Mixed
21/05/2013			SISS23	293	HC	A1	49.71197	-6.24682	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS17	294	HC	A1	49.69497	-6.25550	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS44	295	HC	A1	49.66237	-6.25835	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS04	296	HC	A1	49.64737	-6.25342	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS39	297	HC	A1	49.65625	-6.24936	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS46	298	HC	A1	49.66451	-6.24475	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS12	299	HC	A1	49.68156	-6.23639	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS18	300	HC	A1	49.69897	-6.22853	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS24	301	HC	A2	49.71571	-6.21969	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS30	302	HC	A2	49.73295	-6.21197	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS25	304	HC	A1	49.71957	-6.19325	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS19	305	HC	A3	49.70250	-6.20124	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS13	306	HC	A2	49.68582	-6.21011	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS50	307	HC	A1	49.66844	-6.21809	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS48	308	HC	A1	49.66629	-6.23182	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS41	309	HC	A1	49.65786	-6.23611	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS34	310	HC	A1	49.64910	-6.24041	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS36	311	HC	A1	49.65145	-6.22697	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS42	312	HC	A1	49.65981	-6.22254	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS37	313	HC	A1	49.65332	-6.21340	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS43	314	HC	A1	49.66176	-6.20911	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS38	315	HC	A1	49.65540	-6.19974	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS45	316	HC	A1	49.66379	-6.19542	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS51	317	HC	A1	49.67243	-6.19081	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS14	318	HC	A3	49.68957	-6.18278	S Isles of Scilly 2013	Side Gantry	Mixed

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
22/05/2013	12:25	12:37	SISS14	319	CS	A1	49.68968	-6.18280	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
22/05/2013			SISS20	320	HC	A3	49.70664	-6.17376	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013	13:28	13:38	SISS20	321	CS	A1	49.70716	-6.17385	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
22/05/2013			SISS26	322	HC	A1	49.72377	-6.16528	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS56	323	HC	A1	49.73641	-6.15005	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013	15:08	15:20	SISS28	325	CS	A1	49.72776	-6.13841	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
22/05/2013			SISS22	326	HC	A1	49.71046	-6.14721	S Isles of Scilly 2013	Side Gantry	Sand
22/05/2013			SISS16	327	HC	A1	49.69320	-6.15535	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013	17:31	17:42	SISS16	328	CS	A1	49.69376	-6.15593	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
22/05/2013			SISS09	329	HC	A1	49.67616	-6.16375	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS52	330	HC	A2	49.67432	-6.17729	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013	18:55	19:05	SISS52	331	CS	A1	49.67482	-6.17790	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
22/05/2013			SISS49	332	HC	A1	49.66766	-6.16833	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS47	333	HC	A1	49.66558	-6.18188	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS05	334	HC	A1	49.65919	-6.17266	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013	20:30	20:41	SISS05	335	CS	A1	49.65942	-6.17254	S Isles of Scilly 2013	Stern Gantry	Subtidal sand, subtidal coarse
22/05/2013			SISS40	336	HC	A1	49.65706	-6.18610	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013			SISS01	337	HC	A1	49.64223	-6.18063	S Isles of Scilly 2013	Side Gantry	Coarse
22/05/2013	22:25	22:36	SISS01	338	CS	A1	49.64253	-6.18061	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
22/05/2013			SISS03	339	HC	A2	49.64636	-6.15324	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013			SISS55	340	HC	A1	49.64507	-6.13472	S Isles of Scilly 2013	Side Gantry	Mixed
22/05/2013	23:47	23:57	SISS55	341	CS	A1	49.64467	-6.13432	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
23/05/2013			SISS07	342	HC	A1	49.66320	-6.14478	S Isles of Scilly 2013	Side Gantry	Coarse
23/05/2013			SISS11	343	HC	A1	49.68007	-6.13561	S Isles of Scilly 2013	Side Gantry	Coarse
23/05/2013			SISS57	344	HC	A1	49.70159	-6.13404	S Isles of Scilly 2013	104	Coarse
23/05/2013	01:51	02:01	SISS31	345	CS	A1	49.73717	-6.18507	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
23/05/2013	02:54	03:04	SISS51	346	CS	A1	49.67274	-6.19138	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
23/05/2013	03:43	03:53	SISS37	347	CS	A1	49.65350	-6.21298	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
23/05/2013	04:31	04:41	SISS13	348	CS	A1	49.68574	-6.20998	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
23/05/2013	05:28	05:40	SISS30	349	CS	A1	49.73315	-6.21205	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
23/05/2013	07:07	07:18	SISS18	350	CS	A1	49.69968	-6.22837	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
23/05/2013	08:14	08:24	SISS41	351	CS	A1	49.65857	-6.23579	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse, subtidal sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
23/05/2013	08:58	09:09	SISS34	352	CS	A1	49.64978	-6.24057	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse, subtidal sand
23/05/2013	09:36	09:46	SISS04	353	CS	A1	49.64700	-6.25414	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
23/05/2013	12:13	12:26	SISS44	354	CS	A1	49.66250	-6.25884	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
23/05/2013	13:12	13:23	SISS35	355	CS	A1	49.65019	-6.29014	S Isles of Scilly 2013	Stern Gantry	Subtidal sand
23/05/2013	13:55	14:08	SISS08	356	CS	A1	49.67328	-6.29061	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse, subtidal sand
23/05/2013	15:10	15:21	SISS27	357	CS	A1	49.72489	-6.26551	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
23/05/2013			SISS54	358	HC	A2	49.73834	-6.29139	S Isles of Scilly 2013	Side Gantry	Sand
23/05/2013	16:56	17:09	SISS23	359	CS	A1	49.71203	-6.24731	S Isles of Scilly 2013	Stern Gantry	Subtidal coarse
24/05/2013			CTD03	360	CTD	A1	49.18533	-8.90259	S W Deeps West 2013	Side Gantry	
24/05/2013	16:05	16:49	BoxC	361	MB2	46	49.17370	-8.92824	S W Deeps West 2013	GPS	
24/05/2013	13:23	13:25	BoxC	361	MB2	39	49.17988	-8.93112	S W Deeps West 2013	GPS	
24/05/2013	14:12	15:01	BoxC	361	MB2	39	49.23802	-9.01460	S W Deeps West 2013	GPS	
24/05/2013	19:35	20:23	BoxC	361	MB2	60	49.22864	-9.02525	S W Deeps West 2013	GPS	
24/05/2013	21:52	22:06	BoxC	361	MB2	67	49.22615	-9.02870	S W Deeps West 2013	GPS	
24/05/2013	22:58	23:55	BoxC	361	MB2	74	49.22420	-9.03288	S W Deeps West 2013	GPS	
24/05/2013	00:51	01:46	BoxC	361	MB2	81	49.22238	-9.03527	S W Deeps West 2013	GPS	
24/05/2013	06:34	07:23	BoxC	361	MB2	11	49.18520	-8.91213	S W Deeps West 2013	GPS	
24/05/2013	12:25	13:14	BoxC	361	MB2	32	49.17881	-8.92235	S W Deeps West 2013	GPS	
24/05/2013	04:48	05:30	BoxC	361	MB2	4	49.24664	-8.99901	S W Deeps West 2013	GPS	
24/05/2013	17:47	18:31	BoxC	361	MB2	53	49.17170	-8.93189	S W Deeps West 2013	GPS	
24/05/2013	07:34	07:34	BoxC	361	MB2	18	49.18290	-8.91592	S W Deeps West 2013	GPS	
24/05/2013	08:37	09:27	BoxC	361	MB2	18	49.24187	-9.00559	S W Deeps West 2013	GPS	
24/05/2013	10:33	11:28	BoxC	361	MB2	25	49.23958	-9.00831	S W Deeps West 2013	GPS	
25/05/2013			AddGT06	362	HC	A1	49.17834	-8.93137	S W Deeps West 2013	Side Gantry	Sand
25/05/2013	03:19	03:29	AddGT06	363	CS	A1	49.17798	-8.93241	S W Deeps West 2013	Stern Gantry	Subtidal sand, subtidal coarse
25/05/2013			AddGT08	364	HC	A1	49.19626	-8.95195	S W Deeps West 2013	Side Gantry	Sand
25/05/2013	04:17	04:27	AddGT08	365	CS	A1	49.19635	-8.95322	S W Deeps West 2013	Stern Gantry	Subtidal sand
25/05/2013			AddGT05	366	HC	A1	49.21125	-8.97719	S W Deeps West 2013	Side Gantry	Sand
25/05/2013	05:20	05:31	AddGT05	367	CS	A1	49.21122	-8.97782	S W Deeps West 2013	Stern Gantry	Subtidal sand
25/05/2013			AddGT07	368	HC	A1	49.22131	-8.99548	S W Deeps West 2013	Side Gantry	Sand
25/05/2013	06:14	06:28	AddGT07	369	CS	A1	49.22181	-8.99604	S W Deeps West 2013	Stern Gantry	Subtidal course
25/05/2013			S019	370	HC	A1	49.36864	-8.92450	S W Deeps West 2013	Side Gantry	Sand

Date	SOL Time	EOL Time	Station Code	Station Number	Gear Code	Attempt	Latitude DD	Longitude DD	Area Name	Position Reference Point	BSH
25/05/2013	08:21	08:33	S019	371	CS	A1	49.36867	-8.92459	S W Deeps West 2013	Stern Gantry	Subtidal sand
25/05/2013			CTD04	372	CTD	A1	49.10590	-9.02984	S W Deeps West 2013	Side Gantry	
25/05/2013	18:45	19:29	Box D	373	MB2	60	49.07980	-9.04605	S W Deeps West 2013	GPS	
25/05/2013	19:37	20:26	Box D	373	MB2	67	49.01970	-8.96186	S W Deeps West 2013	GPS	
25/05/2013	20:34	21:22	Box D	373	MB2	74	49.07550	-9.05345	S W Deeps West 2013	GPS	
25/05/2013	21:32	22:18	Box D	373	MB2	80	49.01559	-8.96820	S W Deeps West 2013	GPS	
25/05/2013	12:02	12:50	Box D	373	MB2	11	49.03808	-8.93544	S W Deeps West 2013	GPS	
25/05/2013	13:00	13:50	Box D	373	MB2	18	49.09326	-9.02555	S W Deeps West 2013	GPS	
25/05/2013	17:56	18:38	Box D	373	MB2	53	49.08410	-9.04620	S W Deeps West 2013	GPS	
25/05/2013	11:06	11:55	Box D	373	MB2	4	49.03950	-8.93043	S W Deeps West 2013	GPS	
25/05/2013	13:59	14:50	Box D	373	MB2	25	49.03316	-8.94105	S W Deeps West 2013	GPS	
25/05/2013	14:59	15:52	Box D	373	MB2	32	49.08925	-9.03284	S W Deeps West 2013	GPS	
25/05/2013	16:02	16:53	Box D	373	MB2	39	49.02884	-8.94803	S W Deeps West 2013	GPS	
25/05/2013	17:02	17:47	Box D	373	MB2	46	49.08447	-9.03918	S W Deeps West 2013	GPS	
25/05/2013			AddGT09	374	HC	A1	49.08215	-9.00803	S W Deeps West 2013	Side Gantry	Coarse
25/05/2013	23:29	23:39	AddGT09	375	CS	A1	49.08221	-9.00847	S W Deeps West 2013	Stern Gantry	Subtidal coarse
26/05/2013			AddGT10	376	HC	A1	49.07133	-9.04007	S W Deeps West 2013	Side Gantry	Sand
26/05/2013	00:31	00:42	AddGT10	377	CS	A1	49.07141	-9.04019	S W Deeps West 2013	Stern Gantry	Subtidal coarse
26/05/2013	01:58	02:29	S055	378	CS	A1	49.09549	-8.85666	S W Deeps West 2013	Stern Gantry	Subtidal Sand
26/05/2013	03:32	04:03	S052	379	CS	A1	49.05527	-8.91627	S W Deeps West 2013	Stern Gantry	Subtidal coarse
26/05/2013	07:20	07:31	GT15	380	CS	A1	48.96447	-9.36526	S W Deeps West 2013	Stern Gantry	Subtidal coarse
26/05/2013	08:06	08:18	GT13	381	CS	A1	48.97110	-9.37368	S W Deeps West 2013	Stern Gantry	Subtidal sand
26/05/2013	08:55	09:06	GT20	382	CS	A1	48.99057	-9.35319	S W Deeps West 2013	Stern Gantry	Subtidal sand

5.6 Daily progress reports

Electronic versions of daily progress reports are available in the supporting documentation.

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: C5785H Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 1 Date: 8/05/2013	Location at 24:00: 51° 11.7'N 4° 50.6'W

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	1	1
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
08:00	09:30	Mobbing/De mobbing	
09:30	19:00	Standby port	Safety induction 10:00 -11:00. Refuelling and taking on stores and freshwater
19:00	19:15	Transit	Pilot onboard
19:15	20:00	Transit	Exited lock and pilot disembarked.
20:00	24:00	Transit	Transit to survey area. Slow progress due to increasing wind speed.

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind				23	Mean (kn)
Sea state				2	Mean (m)
Swell				2	Mean (m)
Vis				10+	Mean
Baro				1019	Mean

Daily Log, Status Report, Issue Page 1 of 2

DAILY LOG
STATUS REPORT

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	1:30	1:30	
Offshore Calibrations			
Total Operation Survey (TOSu)			
Total Operation Sampling (TOSa)			
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit	5:00	5:00	
Standby Port	8:30	8:30	
Others			
Total:			

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks

Weather forecast for the next 24 hours

8-9s occasional gusts to 10.

Planned operation for the next 24 hours

Transit

Agreed Changes to Scope/Survey operation priorities

None

Comments

Delaying sailing would have kept the vessel in Swansea port until 10/05/13. After discussing with the Master and pilot it was decided that the vessel left port before the weather prevented this with the aim to arrive on station in better weather.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 2	Location at 24:00: 50° 7.3N 7° 30.8W
Date: 9/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	1	2
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	13:30	Transit	
13:30	14:30	Muster and toolbox	
14:30	24:00	Transit	

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	32	35	43	35	
Sea state	3	4	4	4	
Swell	4	4	4	4	
Vis	8	8	5	5	
Baro	1016	1014	1016	1016	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks

DAILY LOG
STATUS REPORT

Mob/Demob			
Offshore Calibrations			
Total Operation Survey (TOSu)			
Total Operation Sampling (TOSa)			
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit	24:00		
Standby Port			
Others			
Total:			

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks

Overall Progress Groundtruthing Samples

Action	***Today (Lkm/samples)***	***Accum. (Lkm/samples)***	Remarks

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Start Ground truthing

Agreed Changes to Scope/Survey operation priorities

Comments

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 3 Date: 10/05/2013	Location at 24:00:

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	10:39	Transit	Transit to site
10:39	12:41	Total Operation Sampling (TOSa)	Hamon Grab (Stn codes – s024, s023, GT37)
12:41	13:57	Total Operation Sampling (TOSa)	Camera Sledge (Stn code – GT37)
13:57	14:22	Total Operation Sampling (TOSa)	Hamon Cam (Stn code – s022)
14:22	15:25	Total Operation Sampling (TOSa)	Camera sledge (Stn Code – S022)
15:25	19:10	Total Operation Sampling (TOSa)	Hamon Cam (Stn Code – S021, s025, s020, s012)
19:10	20:03	Total Operation Sampling (TOSa)	Camera Sledge (Stn Code – S012)
20:03	20:47	Total Operation Sampling (TOSa)	Hamon Cam (Stn code - S047)
21:00	22:34	Total	Cameral Sledge (stn Code- GT40)

DAILY LOG
STATUS REPORT

		Operation Sampling (TOSa)	
22:34	23:16	Total Operation Sampling (TOSa)	SPI (Stn Code – S026)
23:16	24:00	Total Operation Sampling (TOSa)	Hamon Cam (stn Code – S026, S027)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	30	25	18.5	22	
Sea state	3.5	2	2	1.5	
Swell	3.5	4	2	2	
Vis	Good	Very Good	Good	Very Good	
Baro	1024	1026	1027	1026	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		01:30	
Offshore Calibrations		00:00	
Total Operation Survey (TOSu)		00:00	
Total Operation Sampling (TOSa)	13:21	13:21	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit	10:39	38:39	
Standby Port		08:30	
Others		01:00	
Total:		63:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab	3		

DAILY LOG
STATUS REPORT

Hamon Cam	9		
Cam Sledge	4		
SPI	5		All taken from site S026

Weather forecast for the next 24 hours

Increasing sea state to 4/5.

Planned operation for the next 24 hours

Ground Truthing

Agreed Changes to Scope/Survey operation priorities

N/A

Comments

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 4	Location at 24:00:
Date: 11/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	01:27	Total Operation Sampling (TOSa)	Camera Sledge (stn Code – S027)
01:27	02:29	Total Operation Sampling (TOSa)	Hamon Cam (stn code – S019, C02)
02:29	03:49	Total Operation Sampling (TOSa)	Camera Sledge (Stn Code – C02)
03:49	06:06	Total Operation Sampling (TOSa)	Hamon Cam (Stn Code – GT36, S098, S104)
06:06	07:02	Total Operation Sampling (TOSa)	Camera Sledge (Stn Code – S104)
07:020	08:10	Total Operation Sampling (TOSa)	Hamon Cam (Stn Code – S108, s113)
08:10	09:07	Total Operation Sampling (TOSa)	Camera Sledge (Stn Code – S113)
09:07	10:16	Total Operation Sampling	Hamon Cam (Stn Code – C01, S018)

DAILY LOG
STATUS REPORT

		(TOSa)	
10:16	10:27	Total Operation Sampling (TOSa)	Camera Sledge (Stn Code – S018)
10:27	12:23	Total Operation Sampling (TOSa)	Hamon Cam (Stn Code – S028, GT41)
12:23	12:57	Total Operation Sampling (TOSa)	Camera Sledge (Stn Code – GT41)
12:57	14:11	Total Operation Sampling (TOSa)	Hamon Cam (Stn code – S118, S112)
14:11	14:38	Total Operation Sampling (TOSa)	Camera sledge (stn code – s112)
14:38	16:40	Total Operation Sampling (TOSa)	Hamon Cam (Stn code – s107, s103)
16:40	18:40	Total Operation Sampling (TOSa)	Camera Sledge (stn code – s103)
18:40	20:20	Total Operation Sampling (TOSa)	Hamon Cam (Stn code – s092, s084)
20:20	20:52	Total Operation Sampling (TOSa)	Camera Sledge (Stn code – S084)
20:52	22:27	Total Operation Sampling (TOSa)	Hamon Cam (Stn code – S091, S096)
22:27	23:29	Total Operation Sampling (TOSa)	Camera Sledge (stn code – S096)
23:29	24:00	Total Operation Sampling (TOSa)	Hamon Cam (Stn code – S102)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	26	21	22	20	
Sea state	3	2.5	1.5	1.5	
Swell	3	2.5	2	2	
Vis	7	6	7	6.5	

DAILY LOG
STATUS REPORT

Baro	1028	1028	1030.5	1032	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		01:30	
Offshore Calibrations		00:00	
Total Operation Survey (TOSu)		00:00	
Total Operation Sampling (TOSa)	24:00	37:21	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit		38:39	
Standby Port		08:30	
Others		01:00	
Total:		87:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		3	
Hamon Cam	22	31	
Cam Sledge	11	15	
SPI		5	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Ground Truthing

Agreed Changes to Scope/Survey operation priorities

N/A

Comments

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 5	Location at 24:00:
Date: 12/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:04	Total Operation Sampling (TOSa)	Cam sledge (Stn Code – S096)
00:04	1:42	Total Operation Sampling (TOSa)	Ham Cam (Stn Code – S102, S101, S106)
01:42	02:26	Total Operation Sampling (TOSa)	SPI – (stn code – S106)
02:26	03:40	Total Operation Sampling (TOSa)	Ham Cam – (Stn code – GT38, GT39)
03:40	04:24	Total Operation Sampling (TOSa)	Cam Sledge Stn code – GT39
04:24	06:01	Total Operation Sampling (TOSa)	Ham Cam (Stn code – S117, S013)
06:01	07:15	Total Operation Sampling (TOSa)	Cam Sledge (Stn Code – S013)
07:15	09:33	Total Operation Sampling	Ham Cam (Stn code – S109, S110, S105, S100)

DAILY LOG
STATUS REPORT

		(TOSa)	
09:33	10:19	Total Operation Sampling (TOSa)	Cam Sledge – Stn code – S100
10:19	12:18	Total Operation Sampling (TOSa)	Ham Cam – (Stn Code – So95, S090, S080)
12:18	13:52	Total Operation Sampling (TOSa)	Cam Sledge – (stn code – S080, S076)
13:52	15:57	Total Operation Sampling (TOSa)	Ham Cam - (stn code – S085, S079, S089)
15:57	16:48	Total Operation Sampling (TOSa)	Cam sledge – (stn code – S089)
16:48	18:13	Total Operation Sampling (TOSa)	Ham Cam (Stn code – S094, S099, S069)
18:13	19:00	Total Operation Sampling (TOSa)	Cam sledge – (stn code – S069)
19:00	21:02	Total Operation Sampling (TOSa)	Ham Cam –(stn Code – S111, S114, S014, S015)
21:02	21:43	Total Operation Sampling (TOSa)	Cam Sledge – (Stn Code – S015)
21:43	22:46	Total Operation Sampling (TOSa)	Ham Cam – Stn code S115, C31
22:46	23:30	Total Operation Sampling (TOSa)	Cam sledge – (stn code C31)
23:30	00:00	Total Operation Sampling (TOSa)	Ham Cam (Stn code – S068, S067, S093)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	16	17	20	20	
Sea state	2	1	1	1	
Swell	2	2	2	2	
Vis	7	6	6	6	

DAILY LOG
STATUS REPORT

Baro	1033	1032	1032	1032	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		01:30	
Offshore Calibrations		00:00	
Total Operation Survey (TOSu)		00:00	
Total Operation Sampling (TOSa)	24:00	61:21	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit		38:39	
Standby Port		08:30	
Others		01:00	
Total:		111:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		3	
Hamon Cam	29	60	
Cam Sledge	10	25	
SPI	5	10	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Ground Truthing

Agreed Changes to Scope/Survey operation priorities

N/A

Comments

31 stations completed from the night and day shift which has been really good.
The weather looks like it will hold for Monday and start to turn rougher on Tuesday.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 6 Date: 13/05/2013	Location at 24:00:

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:46	Total Operation Sampling (TOSa)	Ham Cam – Stn code S067, S093,
00:46	01:28	Total Operation Sampling (TOSa)	Cam Sledge (stn code – S093)
01:28	02:49	Total Operation Sampling (TOSa)	Ham Cam (Stn code- S088, S078, S086)
02:49	03:45	Total Operation Sampling (TOSa)	Cam sledge (Stn code – S086)
03:45	05:20	Total Operation Sampling (TOSa)	Ham Cam (stn code – S075, S072, S046)
05:20	06:04	Total Operation Sampling (TOSa)	Cam Sledge (stn code – S046)
06:04	08:48	Total Operation Sampling (TOSa)	Ham Cam (stn code – S071, S074, S087,S077)
08:48	09:34	Total Operation Sampling	Cam Sledge – (stn code – S077)

DAILY LOG
STATUS REPORT

		(TOSa)	
09:34	11:42	Total Operation Sampling (TOSa)	Ham Cam (Stn code - S062, S064, S066)
11:42	12:36	Total Operation Sampling (TOSa)	Cam Sledge – Stn code – S066
12:36	14:39	Total Operation Sampling (TOSa)	Ham Cam (Stn code – C32, C33, S116, S016)
14:39	15:26	Total Operation Sampling (TOSa)	Cam Sledge (Stn code – S016)
15:26	21:52	Total Operation Sampling (TOSa)	Ham Cam (stn code – S029, C35, C34, S057, S065, S063, S061, S059, S081, S073)
21:52	22:40	Total Operation Sampling (TOSa)	Cam Sledge (stn code – S073)
22:40	00:00	Total Operation Sampling (TOSa)	Ham Cam (Stn Code – S070, S045, S043)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	19	20	22	33	
Sea state	1	1	1	3	
Swell	2	2	2.5	5	
Vis	7	7	7	7	
Baro	1032	1031.5	1031	1013.5	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		01:30	
Offshore Calibrations		00:00	
Total Operation Survey (TOSu)		00:00	
Total Operation Sampling (TOSa)	24:00	85:21	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit		38:39	
Standby Port		08:30	
Others		01:00	

DAILY LOG
STATUS REPORT

Total:		135:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab	0	3	
Hamon Cam	30	90	
Cam Sledge	9	34	
SPI	0	10	

Weather forecast for the next 24 hours

Increased swell from the NW followed by winds to force 5-6 gusting 8.

Planned operation for the next 24 hours

Ground truthing until conditions prevent safe operations. Simultaneous acoustic survey of 'Box A'.

Agreed Changes to Scope/Survey operation priorities

Comments

Progress so far has been really good, but we may now start to be limited to the number of stations we are able to Groundtruth with the incoming weather, however, it is unlikely that we will have to stop work completely – we will multibeam in periods of very bad weather.

Any acoustic boxes will have to be planned just prior to survey – so that data quality is not compromised, taking into account the change in the direction of the weather.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 7	Location at 24:00:
Date: 14/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:46	Total Operation Sampling (TOSa)	Ham Cam (stn code – S043, S042)
00:46	01:32	Total Operation Sampling (TOSa)	Cam Sledge (S042)
01:32	02:28	Total Operation Sampling (TOSa)	Ham Cam (S044, C17)
02:28	03:39	Total Operation Sampling (TOSa)	Cam Sledge (C17)
03:39	05:47	Total Operation Sampling (TOSa)	Ham Cam (C19)
05:47	11:49	Total Operation Sampling (TOSa)	CTD 001
11:49	16:51	Transit	Transit to multibeam box A
16:51	24:00	Total Operation Survey (TOSu)	Multibeam lines A03, A12, A21

DAILY LOG
STATUS REPORT

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	21.5	27.5	33	33	
Sea state	2	1.5	2.5	3	
Swell	3	3	4.5	5	
Vis	7	4	4.5	7	
Baro	1023	1013	1013.5	1013.5	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00	01:30	
Offshore Calibrations	00:00	00:00	
Total Operation Survey (TOSu)	07:09	07:09	
Total Operation Sampling (TOSa)	11:49	97:10	
Equipment/Downtime	00:00	00:00	
Ship/Plant Downtime	00:00	00:00	
Waiting On Weather	00:00	00:00	
Transit	05:02	43:41	Transit to Multibeam box A – due to no longer being able to groundtruth because of weather
Standby Port	00:00	08:30	
Others	00:00	01:00	
Total:	24:00:00	159:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES	24	24		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		3	
Hamon Cam	4	94	
Cam Sledge	2	36	
SPI		10	

Weather forecast for the next 24 hours

Wind to drop by mid-afternoon, followed by a decrease in swell height.

Planned operation for the next 24 hours

Complete multibeam operations at BoxA (100%). An additional Box, 'BoxB', is available to MB if the weather remains constant and prevents continuation of ground truthing survey.

DAILY LOG
STATUS REPORT

Ground truth remaining stations when weather allows. Wind to drop by mid morning followed by a decrease in sea state/swell.

Agreed Changes to Scope/Survey operation priorities

Unable to acquire side scan data. Most likely on the limit of equipment capability in current swell.

Comments

The weather as was predicted reached a point where it was not safe to continue groundtruth operations, therefore we steamed to the first multibeam box. The orientation of the planned acoustic boxes was amended to account for a change in the prevailing wind and swell. Only able to multibeam in one direction – as the data quality was too poor when heading into the NW swell. Unable to acquire side scan data. Fault identified with cable which was successfully re-terminated ready for wet testing 15/05/13.

A second Multibeam box was planned, and MBES operations were expected to begin in the second box during the morning of 15/05/13.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 8 Date: 15/05/2013	Location at 24:00:

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	2
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	03:38	Total Operation Survey (TOSu)	Multibeam lines A21, A30, A39 Box A
03:38	04:57	Transit	Transit from Box A to Box B
04:57	08:07	Total Operation Survey (TOSu)	Multibeam lines A48, A57 Box B
08:07	11:49	Transit	Transit from Box B to Grountruthing stations
11:49	17:51	Total Operation Survey (TOSu)	CTD 02
17:51	19:37	Total Operation Sampling (TOSa)	Hamon Cam (Stn code – S007, S006, C10)
19:37	20:19	Total Operation Sampling (TOSa)	Cam sledge (C10)
20:19	24:00	Total Operation Sampling (TOSa)	Ham Cam (C09, C08, S031, GT01, GT03, GT02, GT04)

DAILY LOG
STATUS REPORT

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	31	23	23	15	
Sea state	2	2	1	1	
Swell	4	4	4	3	
Vis	7	7	7	7	
Baro	1014	1015	1017.5	1017	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00	01:30	
Offshore Calibrations	00:00	00:00	
Total Operation Survey (TOSu)	12:10	19:19	
Total Operation Sampling (TOSa)	06:49	103:59	
Equipment/Downtime	00:00	00:00	
Ship/Plant Downtime	00:00	00:00	
Waiting On Weather	00:00	00:00	
Transit	05:01	48:42	
Standby Port	00:00	08:30	
Others	00:00	01:00	
Total:	24:00:00	183:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES	48	72		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		3	
Hamon Cam	11	105	
Cam Sledge	1	37	
SPI		10	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Ground truthing

Agreed Changes to Scope/Survey operation priorities

Additional ground truthing stations plotted within Box A. Box B remains a back-up in bad weather.

DAILY LOG
STATUS REPORT

Comments

Completed 100% MBES in Box A.

Wet tested the retermination of the sidescan cable.

Returned to appropriate ground truthing station to coincide with favourable weather conditions.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 9	Location at 24:00:
Date: 16/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	1	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:06	Total Operation Sampling (TOSa)	Ham Cam (GT05)
00:06	00:39	Total Operation Sampling (TOSa)	Cam Sledge (GT05)
00:39	01:28	Total Operation Sampling (TOSa)	Ham Cam (Gt07, GT08)
01:28	02:03	Total Operation Sampling (TOSa)	Cam Sledge (Gt08)
02:03	04:30	Total Operation Sampling (TOSa)	Ham Cam (GT11, Gt14, GT16, GT13, GT10, GT09)
04:30	05:01	Total Operation Sampling (TOSa)	Cam sledge (GT09)
05:01	07:22	Total Operation Sampling (TOSa)	Ham Cam (Gt12, GT15, GT18, GT19, Gt17)
07:22	08:03	Total Operation Sampling	Cam Sledge (GT17)

DAILY LOG
STATUS REPORT

		(TOSa)	
08:03	13:36	Total Operation Sampling (TOSa)	Ham Cam (GT20, Gt22, Gt23, Gt21, S032, C07, S004, S003, S002)
13:36	14:25	Total Operation Sampling (TOSa)	Cam sledge (S002)
14:25	15:09	Total Operation Sampling (TOSa)	Ham Cam (S001, S005)
15:09	15:51	Total Operation Sampling (TOSa)	Cam Sledge (S005)
15:51	19:03	Total Operation Sampling (TOSa)	Ham Cam (S040, C09, C03, C04, C05)
19:03	19:47	Total Operation Sampling (TOSa)	Cam Sledge (C05)
19:47	21:43	Total Operation Sampling (TOSa)	Ham Cam (S041, C12, C14, GT24)
21:43	22:24	Total Operation Sampling (TOSa)	Cam Sledge (GT24)
22:24	00:00	Total Operation Sampling (TOSa)	Ham Cam (GT25, GT26, C16, C13)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	10	Light airs	Light airs	Light airs	
Sea state	1	0.5	0.5	0.5	
Swell	3	2	0.5	1.5	
Vis	7	7	7	7	
Baro	1015	1012	1010	1009	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		01:30	
Offshore Calibrations		00:00	

DAILY LOG
STATUS REPORT

Total Operation Survey (TOSu)		19:19	
Total Operation Sampling (TOSa)	24:00	127:59	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit		48:42	
Standby Port		08:30	
Others		01:00	
Total:		207:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		72		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		3	
Hamon Cam	38	143	
Cam Sledge	9	46	
SPI		10	

Weather forecast for the next 24 hours

Wind slightly increasing and shifting to a northerly direction.

Planned operation for the next 24 hours

Ground truthing

Agreed Changes to Scope/Survey operation priorities

Comments

We saw a juvenille *Mola mola* and recorded its position!! Sunfish are the heaviest extant teleost fish in the world, and release the most number of eggs of any vertebrate!

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 10 Date: 17/05/2013	Location at 24:00:

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:45	Total Operation Sampling (TOSa)	Cam Sledge (C13)
00:45	01:51	Total Operation Sampling (TOSa)	Ham Cam (C11, S034, S039)
01:51	02:47	Total Operation Sampling (TOSa)	Cam Sledge (S039)
02:47	04:16	Total Operation Sampling (TOSa)	Ham Cam (S036, S035, S033)
04:16	05:02	Total Operation Sampling (TOSa)	Cam Sledge (S033)
05:02	05:39	Total Operation Sampling (TOSa)	Ham Cam (C15)
05:39	06:17	Total Operation Sampling (TOSa)	SPI (GT27)
06:17	07:38	Total Operation Sampling	Ham Cam (Gt27, GT28)

DAILY LOG
STATUS REPORT

		(TOSa)	
07:38	08:26	Total Operation Sampling (TOSa)	Cam Sledge (GT28)
08:26	09:41	Total Operation Sampling (TOSa)	Ham Cam (GT30, Gt32, GT34)
09:41	10:22	Total Operation Sampling (TOSa)	Cam Sledge (GT34)
10:22	14:23	Total Operation Sampling (TOSa)	Ham Cam (GT31, GT29, S009, S008, GT33, GT35, S047)
14:23	15:07	Total Operation Sampling (TOSa)	Cam Sledge (S047)
15:07	16:35	Total Operation Sampling (TOSa)	Ham Cam (S10, C23, S037)
16:35	17:44	Total Operation Sampling (TOSa)	Cam Sledge (S037)
17:44	19:09	Total Operation Sampling (TOSa)	Ham Cam (S038, C18)
19:09	19:56	Total Operation Sampling (TOSa)	Cam Sledge (C18)
19:56	22:13	Total Operation Sampling (TOSa)	Ham Grab (C19, C20, C21, S050)
22:13	23:05	Total Operation Sampling (TOSa)	Cam Sledge (S050)
23:05	23:52	Total Operation Sampling (TOSa)	Ham Grab (C24, C22)
23:52	24:00	Total Operation Sampling (TOSa)	Cam Sledge (C22)

DAILY LOG
STATUS REPORT

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	20	18	20	19	
Sea state	1	1	1	1	
Swell	2	2	2	2	
Vis	7	7	8	8	
Baro	1011.5	1016	1020	1022	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		01:30	
Offshore Calibrations		00:00	
Total Operation Survey (TOSu)		19:19	
Total Operation Sampling (TOSa)	24:00	151:59	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit		48:42	
Standby Port		08:30	
Others		01:00	
Total:		231:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		72		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		3	
Hamon Cam	30	173	
Cam Sledge	9	55	
SPI	5	15	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Complete ground truthing survey at South West Deeps West rMCZ.
Complete the additional ground truth survey stations and remaining multibeam lines within box A, unlikely that we will be able to collect sidescan for this area as the weather forecast for Sunday is turning bad and we would like to be out of the area before that happens.

Agreed Changes to Scope/Survey operation priorities

DAILY LOG
STATUS REPORT

Comments

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 11	Location at 24:00:
Date: 18/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:39	Total Operation Sampling (TOSa)	Cam Sledge (C22)
00:39	02:57	Total Operation Sampling (TOSa)	Ham Grab (S082, C25, S048, S051, C27)
02:57	03:37	Total Operation Sampling (TOSa)	Cam Sledge (C27)
03:37	05:06	Total Operation Sampling (TOSa)	Ham Grab (C26, S083, S058)
05:06	05:53	Total Operation Sampling (TOSa)	Cam Sledge (S058)
05:53	07:56	Total Operation Sampling (TOSa)	Ham Grab (S049, C28, C29, C30)
07:56	09:04	Total Operation Sampling (TOSa)	Cam Sledge (C30)
09:04	10:42	Total Operation Sampling	Ham Grab (S052, S053)

DAILY LOG
STATUS REPORT

		(TOSa)	
10:42	11:49	Total Operation Sampling (TOSa)	Cam Sledge (S053)
11:49	13:50	Total Operation Sampling (TOSa)	Ham Grab (S060, S054, S055, S056)
13:50	14:33	Total Operation Sampling (TOSa)	Cam Sledge (S056)
14:33	15:15	Total Operation Sampling (TOSa)	Ham Grab (S030, C36)
15:15	16:43	Total Operation Sampling (TOSa)	Cam Sledge (C36)
16:43	17:24	Total Operation Sampling (TOSa)	Ham Grab (C38, C37)
17:24	18:01	Total Operation Sampling (TOSa)	Cam Sledge (C37)
18:01	19:54	Total Operation Sampling (TOSa)	Ham Grab (C39, Add Gt04, AddGt01)
19:54	21:18	Total Operation Sampling (TOSa)	Cam Sledge (Add GT01, Add GT02)
21:18	22:18	Total Operation Sampling (TOSa)	Ham Grab (Add GT02, AddGT03)
22:18	22:29	Total Operation Sampling (TOSa)	Cam Sledge (AddGT03)
22:29	24:00	Transit	Transit to South of the Isles of Scilly rMCZ

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	16	10	15	18	
Sea state	1	1	1	1	
Swell	2	2	2	2	

DAILY LOG
STATUS REPORT

Vis	7	7	7	7	
Baro	1022	1024.5	1024	1024	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00	01:30	
Offshore Calibrations	00:00	00:00	
Total Operation Survey (TOSu)	22:29	41:48	
Total Operation Sampling (TOSa)	00:00	151:59	
Equipment/Downtime	00:00	00:00	
Ship/Plant Downtime	00:00	00:00	
Waiting On Weather	00:00	00:00	
Transit	01:31	50:13	
Standby Port	00:00	08:30	
Others	00:00	01:00	
Total:	24:00:00	255:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		72		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab	27	30	
Hamon Cam		173	
Cam Sledge	11	66	
SPI		15	

Weather forecast for the next 24 hours

Calm seas and light northerly winds.

Planned operation for the next 24 hours

Transit to the South of the Scilly Isles rMCZ to commence 100% coverage multibeam survey. The western edge of the rMCZ overlaps the traffic separation zone, which separates westbound and eastbound traffic. Survey lines have been planned to run East/West and the vessel will adhere to the traffic restrictions.

Agreed Changes to Scope/Survey operation priorities

Comments

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 12	Location at 24:00:
Date: 19/05/2013	

To Company:	Person:	E-mail:
Cefas	Dave Limpenny	David.Limpenny@cefas.co.uk
Cefas	Sue Ware	Suzanne.Ware@cefas.co.uk
JNCC	Neil Golding	Neil.Golding@jncc.gov.uk
JNCC	Gareth Johnson	Gareth.Johnson@jncc.gov.uk

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	08:18	Transit	Transit to South of the Isles of Scilly rMCZ
08:18	08:43	Total Operation Survey (TOSu)	CTD 01
08:43	24:00	Total Operation Survey (TOSu)	Multibeam lines (3, 221, 9, 15, 16, 209, 22, 203, 28)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	13	12.5	12	Light Airs	
Sea state	1	0.5	<1	<1	
Swell	2	1.5	1	<1	
Vis	7	8	8	9	
Baro	1023	1024	1026	1028	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00	01:30	
Offshore Calibrations	00:00	00:00	
Total Operation	15:42	57:30	

DAILY LOG
STATUS REPORT

Survey (TOSu)			
Total Operation Sampling (TOSa)	00:00	151:59	
Equipment/Downtime	00:00	00:00	
Ship/Plant Downtime	00:00	00:00	
Waiting On Weather	00:00	00:00	
Transit	08:18	58:31	
Standby Port	00:00	08:30	
Others	00:00	01:00	
Total:	24:00:00	279:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES	9	81		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam		173	
Cam Sledge		66	
SPI		15	

Weather forecast for the next 24 hours

Calm seas and light northerly winds.

Planned operation for the next 24 hours

Continue Multibeam survey at South of the Isles of Scilly rMCZ.

Agreed Changes to Scope/Survey operation priorities

Comments

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 13	Location at 24:00: 40° 40.9'N 006° 16.6'W
Date: 20/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	07:03	Total Operation Survey (TOSu)	Multibeam lines (197, 34, 191, 88)
07:03	07:35	Total Operation Survey (TOSu)	CTD
07:35	24:00	Total Operation Survey (TOSu)	Multibeam lines (184, 41, 177, 48, 110, 55, 117, 62, 124, 69, 131,76)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	14	14	14	13	
Sea state	<1	<1	<1	<1	
Swell	<1	<1	<1	<1	
Vis	8	8	7	7	
Baro	1028.5	1029	1028.5	1029	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks

DAILY LOG
STATUS REPORT

Mob/Demob		01:30	
Offshore Calibrations		00:00	
Total Operation Survey (TOSu)	24:00	81:30	
Total Operation Sampling (TOSa)		175:59	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit		58:31	
Standby Port		08:30	
Others		01:00	
Total:		327:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES	190.4	287.4		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam		173	
Cam Sledge		66	
SPI		15	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Complete 100% MBES (address any gaps identified in the acquisition software track plot). Progress onto grabs and camera sledges.

Agreed Changes to Scope/Survey operation priorities

Comments

We consulted a GIS layer which showed the location of known wrecks in the area, none of the ground truthing stations are at risk of fouling.
An initial look at the Olex system indicated that the survey area (South of the Isle of Scilly) is of uniform depth with a slight increase in depth towards the south of the site. Sandwaves running NE-SW throughout the site, with what appears to be coarser sediment to the north of the site, and sandier sediment towards the south. These are obviously preliminary findings and the processing on shore should produce a comprehensive map.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 14 Date: 21/05/2013	Location at 24:00: 49°42.5'N, 006°16.6'W

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	13:07	Total Operation Survey (TOSu)	Multibeam lines (138, 82, 95, 102, 145, 152, 159, 166, 172, 106)
13:07	13:54	Transit	Transit to Ground truth station
13:54	14:26	Total Operation Sampling (TOSa)	Ham Cam (276)
14:26	17:41	Total Operation Sampling (TOSa)	Cam Sledge (277, 278, 279)
17:41	21:17	Total Operation Sampling (TOSa)	Ham Cam (280, 281, 282, 283, 284, 285, 286, 287)
21:17	21:58	Total Operation Sampling (TOSa)	Cam Sledge (288)
21:58	22:44	Total Operation Sampling (TOSa)	Ham Cam (289)
22:44	23:16	Total Operation Sampling (TOSa)	Cam Sledge (290)
23:16	24:00	Total Operation Sampling (TOSa)	Ham cam (291, 292, 293)

DAILY LOG
STATUS REPORT

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	14	12	18	14	
Sea state	<1	1	1	1	
Swell	<1	1	1.5	1	
Vis	7	5.5	7	7	
Baro	1029.5	1031	1032	1033.5	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00	01:30	
Offshore Calibrations	00:00	00:00	
Total Operation Survey (TOSu)	13:07	94:37	
Total Operation Sampling (TOSa)	10:06	186:05	
Equipment/Downtime	00:00	00:00	
Ship/Plant Downtime	00:00	00:00	
Waiting On Weather	00:00	00:00	
Transit	00:47	59:18	
Standby Port	00:00	08:30	
Others	00:00	01:00	
Total:	24:00:00	351:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES	119	406.4		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam	13	186	
Cam Sledge	5	71	
SPI		15	

Weather forecast for the next 24 hours

- A dry evening with some bright or sunny spells, particularly in the south. A clear and cool night will follow, most places will remain dry but a few isolated showers may develop in the north. Northerly winds strengthening overnight.

Planned operation for the next 24 hours

Continue ground truthing.

Agreed Changes to Scope/Survey operation priorities

DAILY LOG
STATUS REPORT

Comments

We finished the multibeam lines and then started grabbing at the NW of the site due to the traffic separation zone. The first GT station returned a no sample with the Hamon Cam, we camera sledged and saw coarse sand with cobbles over harder substrate. There were some technical issues with retrieving stills from the camera sledge, so we progressed with Ham Cam only. This will mean that we can better place camera sledges based on initial HamCam footage to target sediment types, boundaries, and features of interest.
We have had two no samples from the HamCam, all from stations towards the north of the site.
The remote multi-user unit on the Tower navigation software failed for a few minutes – to no ill effect, apparently it wouldn't be a trip without this!

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 15 Date: 22/05/2013	Location at 24:00: 49°42.5'N, 006°16.16'W

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	12:25	Total Operation Sampling (TOSa)	Ham Cam (SISS17, SISS44, SISS04, SISS39, SISS46, SISS12, SISS18, SISS24, SISS30, SISS31, SISS25, SISS19, SISS13, SISS50, SISS48, SISS41, SISS34, SISS36, SISS42, SISS37, SISS43, SISS38, SISS45, SISS51, SISS14)
12:25	12:55	Total Operation Sampling (TOSa)	Cam Sledge (SISS 14)
12:55	13:28	Total Operation Sampling (TOSa)	Ham Cam (SISS20)
13:28	14:00	Total Operation Sampling (TOSa)	Cam Sledge (SISS20)
14:00	15:08	Total Operation Sampling (TOSa)	Ham Cam (SISS26, SISS56, SISS28)
15:08	16:38	Total Operation Sampling (TOSa)	Cam Sledge (SISS28)
16:38	17:31	Total Operation Sampling (TOSa)	Ham Cam (SISS22, SISS16)
17:31	18:07	Total Operation Sampling (TOSa)	Cam Sledge (SISS16)
18:07	18:55	Total Operation	Ham Cam (SISS09, SISS52)

DAILY LOG
STATUS REPORT

		Sampling (TOSa)	
18:55	19:27	Total Operation Sampling (TOSa)	Cam Sledge (SISS52)
19:27	20:30	Total Operation Sampling (TOSa)	Ham Cam (SISS49, SISS47, SISS05)
20:30	21:07	Total Operation Sampling (TOSa)	Cam Sledge (SISS05)
21:07	22:25	Total Operation Sampling (TOSa)	Ham Cam (SISS40, SISS01)
22:25	23:01	Total Operation Sampling (TOSa)	Cam Sledge (SISS01)
23:01	23:47	Total Operation Sampling (TOSa)	Ham Cam (SISS03, SISS55)
23:47	00:00	Total Operation Sampling (TOSa)	Cam Sledge (SISS55)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	15	22	19	16	
Sea state	1	1	1	1	
Swell	1	1.5	1.5	1.5	
Vis	7	7	7	7	
Baro	1032.5	1034	1035.5	1035	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		01:30	
Offshore Calibrations		00:00	
Total Operation Survey (TOSu)		94:37	
Total Operation Sampling (TOSa)	24:00	210:05	
Equipment/Downtime		00:00	
Ship/Plant Downtime		00:00	
Waiting On Weather		00:00	
Transit		59:18	
Standby Port		08:30	

DAILY LOG
STATUS REPORT

Others		01:00	
Total:		375:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		406.4		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam	40	213	
Cam Sledge	8	74	
SPI		15	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Continue groundtruthing aiming to complete all stations by 23/05/13.

Agreed Changes to Scope/Survey operation priorities

Comments

Camera sledge operational as of 16:00 – survey progressing well
We have had another no sample – again towards the north of the site, it will be interesting to see the processed backscatter in this area.
The sediment in general is coarse sand/biogenic – with cobbles and the seabed community seems to be mostly mixed hydroids and bryozoans attached to the cobbles.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 16	Location at 24:00: 49°38.8'N, 006°09.2'W
Date: 23/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	1	4
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	01:51	Total Operation Sampling (TOSa)	Ham Cam (SISS 07, SISS11, SISS57)
01:51	15:47	Total Operation Sampling (TOSa)	Cam Sledge (SISS31, SISS51, SISS37, SISS13, SISS30, SISS18, SISS41, SISS34, SISS04, SISS44, SISS35, SISS08, SISS27))
15:47	16:56	Total Operation Sampling (TOSa)	Ham Cam (SISS54)
16:56	17:09	Total Operation Sampling (TOSa)	Cam sledge (SISS23)
17:09	00:00	Transit	Transit to South West Deeps West.

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	17	22	20	16	
Sea state	1	1	1	1	
Swell	1	1.5	1.5	1.5	
Vis	7	7	7	7	
Baro	1032.5	1035	1035.5	1035	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00	01:30	
Offshore Calibrations	00:00	00:00	

DAILY LOG
STATUS REPORT

Total Operation Survey (TOSu)	00:00	94:37	
Total Operation Sampling (TOSa)	16:56	227:01	
Equipment/Downtime	00:00	00:00	
Ship/Plant Downtime	00:00	00:00	
Waiting On Weather	00:00	00:00	
Transit	00:00	59:18	
Standby Port	07:04	15:34	
Others	00:00	01:00	
Total:	24:00:00	399:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		406.4		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam	4	217	
Cam Sledge	14	88	
SPI		15	

Weather forecast for the next 24 hours

Wind - Northwesterly 5 or 6.
Sea State - Moderate or rough.
Weather - Showers.
Visibility - Good.

Planned operation for the next 24 hours

Transit to South West Deeps West.

Agreed Changes to Scope/Survey operation priorities

Comments

Completed a comprehensive ham cam and camera sledge covering of SISS by 19:00. In the process of mapping the initial assessment of the Broadscale Habitats – with the possibility of collecting more GT on the transit back to Lowestoft if required and if time allows.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 17	Location at 24:00: 49° 13.2'N, 009° 1.8'W
Date: 24/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	4
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	04:48	Transit	Transit to SWDW Box C
04:48	24:00	Total Operation Survey (TOSu)	MBES lines (Box C, 4, 11, 18, 25, 32, 39, 46, 53, 60, 67, 74)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	28	23	23	17.5	
Sea state	2	2	1.5	1.5	
Swell	3	2.5	2	2	
Vis	8	7	7	7	
Baro	1032.5	1033	1033	1034	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00:00	01:30	
Offshore Calibrations	00:00:00	00:00	
Total Operation Survey (TOSu)	19:12:00	113:49	
Total Operation Sampling (TOSa)	00:00	227:01	
Equipment/Downtime	00:00:00	00:00	
Ship/Plant Downtime	00:00:00	00:00	
Waiting On Weather	00:00:00	00:00	

DAILY LOG
STATUS REPORT

Transit	04:48:00	64:06	
Standby Port	00:00:00	15:34	
Others	00:00:00	01:00	
Total:	24:00:00	423:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES	88	494.4		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam		217	
Cam Sledge		88	
SPI		15	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

Continue to MB Box C, once MB has been completed continue to GT the additional GT stations located in Box C. Transit to Box D and start MB and GT operations in Box D.

Agreed Changes to Scope/Survey operation priorities

Comments

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 18	Location at 24:00: 49° 4.09'N, 009° 1.0'W
Date: 25/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	4
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	01:46	Total Operation Survey (TOSu)	MBES (Box C , lines 81)
01:46	02:05	Transit	Transit to Box D
02:05	03:19	Total Operation Sampling (TOSa)	Ham cam (AddGT06)
03:19	03:57	Total Operation Sampling (TOSa)	Cam Sledge (AddGT06)
03:57	04:17	Total Operation Sampling (TOSa)	Ham Cam (AddGT08)
04:17	5:00	Total Operation Sampling (TOSa)	Cam Sledge (AddGT05)
5:00	05:20	Total Operation Sampling (TOSa)	Ham Cam (AddGT05)
05:20	05:58	Total Operation Sampling (TOSa)	Cam Sledge (AddGT07)
05:58	06:14	Total Operation Sampling (TOSa)	Ham Cam (AddGT07)
06:14	08:03	Total Operation	Cam Sledge (AddGT07)

DAILY LOG
STATUS REPORT

		Sampling (TOSa)	
08:03	08:21	Total Operation Sampling (TOSa)	Ham cam (S019)
08:21	08:33	Total Operation Sampling (TOSa)	Cam Sledge (S019)
08:33	22:18	Total Operation Survey (TOSu)	MBES (Box D lines, 4, 11, 18, 25, 32, 39, 46, 53, 60, 67, 74, 80)
22:18	23:11	Total Operation Sampling (TOSa)	Ham Cam (ADDGT09)
23:11	00:00	Total Operation Sampling (TOSa)	Cam Sledge (ADDGT09)

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	8	Light airs	Light airs	Light airs	
Sea state	1	<1	<1	<1	
Swell	1	1	1	<1	
Vis	8	8	8	8	
Baro	1034.5	1034.5	1035	1034	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00:00	01:30	
Offshore Calibrations	00:00:00	00:00	
Total Operation Survey (TOSu)	15:31:00	129:20	
Total Operation Sampling (TOSa)	08:10	235:11	
Equipment/Downtime	00:00:00	00:00	
Ship/Plant Downtime	00:00:00	00:00	
Waiting On Weather	00:00:00	00:00	
Transit	00:19:00	64:25	
Standby Port	00:00:00	15:34	
Others	00:00:00	01:00	
Total:	24:00:00	447:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES	104	598.4		

DAILY LOG
STATUS REPORT

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam	6	223	
Cam Sledge	6	94	
SPI		15	

Weather forecast for the next 24 hours

Wind - In west, cyclonic 4 or 5, occasionally 6 in west. In east, variable 3 or 4, becoming southerly or southwesterly 4 or 5.
Sea State - In west, moderate or rough, becoming slight in east. in east, slight or moderate.
Weather - In west, rain or showers. In east, fair.
Visibility - In west, good. In east, moderate or good.

Planned operation for the next 24 hours

Finish Ground truthing of Box D and additional camera sledges at previously grabbed sites, before beginning the transit back to Lowestoft.

Agreed Changes to Scope/Survey operation priorities

Comments

We used the initial habitat assessment from the ground truthing grid to target additional MBES and ground truthing works.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 19	Location at 49° 47.6'N, 4° 51.2'N
Date: 26/05/2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	4
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:14	Total Operation Sampling (TOSa)	Cam Sledge (ADDGT09)
00:14	00:31	Total Operation Sampling (TOSa)	Ham Cam (AddGT10)
00:31	09:06	Total Operation Sampling (TOSa)	Cam sledge (AddGT10, S053, S052, GT15, GT20)
09:06	24:00	Transit	Transit back to Lowestoft

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00:00	01:30	
Offshore Calibrations	00:00:00	00:00	
Total Operation Survey (TOSu)	00:00:00	129:20	
Total Operation Sampling (TOSa)	09:06	244:17	
Equipment/Downtime	00:00:00	00:00	
Ship/Plant Downtime	00:00:00	00:00	
Waiting On Weather	00:00:00	00:00	
Transit	14:54:00	79:19	
Standby Port	00:00:00	15:34	
Others	00:00:00	01:00	
Total:	24:00:00	471:00	

DAILY LOG
STATUS REPORT

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		598.4		

Overall progress Groundtruthing Samples

Action	***Today (Lkm/samples)***	***Accum. (Lkm/samples)***	Remarks
Hamon Grab		30	
Hamon Cam	1	224	
Cam Sledge	5	99	
SPI		15	

Weather forecast for the next 24 hours

Wind - Variable 4, becoming southwesterly 5 or 6.
Sea State - Smooth or slight, occasionally moderate later.
Weather - Showers later.
Visibility - Good.

Planned operation for the next 24 hours

Transit to Lowestoft

Agreed Changes to Scope/Survey operation priorities

Comments

During the transit back to Lowestoft all data collected on board will be quality checked and any amendments required following the survey will be noted, e.g. file name changes.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 20 Date: 27/05/2013	Location at 24:00: 50° 54.5'N, 000° 59.1'E

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	4
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	01:00	Transit	Transit back to Lowestoft
01:00	07:00	Others	Search and Rescue operations
07:00	24:00	Transit	Transit back to Lowestoft

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	00:00:00	01:30	
Offshore Calibrations	00:00:00	00:00	
Total Operation Survey (TOSu)	00:00:00	129:20	
Total Operation Sampling (TOSa)	00:00	244:17	
Equipment/Downtime	00:00:00	00:00	
Ship/Plant Downtime	00:00:00	00:00	
Waiting On Weather	00:00:00	00:00	
Transit	18:00:00	97:19	
Standby Port	00:00:00	15:34	
Others	06:00:00	07:00	
Total:	24:00:00	495:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		598.4		

DAILY LOG
STATUS REPORT

Overall progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam		224	
Cam Sledge		99	
SPI		15	

Weather forecast for the next 24 hours

Wind - South backing east 4 or 5.
Sea State - Slight or moderate.
Weather - Showers.
Visibility - Good, occasionally poor later.

Planned operation for the next 24 hours

Transit to Lowestoft

Agreed Changes to Scope/Survey operation priorities

Comments

The vessel responded to and coordinated search and rescue operations to a mayday call out from Brixham Coastguard regarding a passenger ferry with a possible man over board. Scientists and crew members were asked to keep look out on the bridge while searching for the man over board. The search was called off at 7am by Brixham Coastguard, where upon the Endeavour continued its transit to Lowestoft.

CEFAS SIC: [redacted]

DAILY LOG
STATUS REPORT

Vessel: Cefas Endeavour	Project: Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 21 Date: 28/05/2013	Location at 24:00:

To Company:	Person:	E-mail:
Cefas	[redacted]	[redacted]
Cefas		
JNCC		
JNCC		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	4
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00		Transit	Transit back to Lowestoft

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob			
Offshore Calibrations			
Total Operation Survey (TOSu)			
Total Operation Sampling (TOSa)			
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit			
Standby Port			
Others			
Total:			

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
MBES		598.4		

DAILY LOG
STATUS REPORT

Overall progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon Grab		30	
Hamon Cam		224	
Cam Sledge		99	
SPI		15	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours

N/A

Agreed Changes to Scope/Survey operation priorities

Comments

CEFAS SIC: [redacted]

5.7 Breakdown of survey operation time

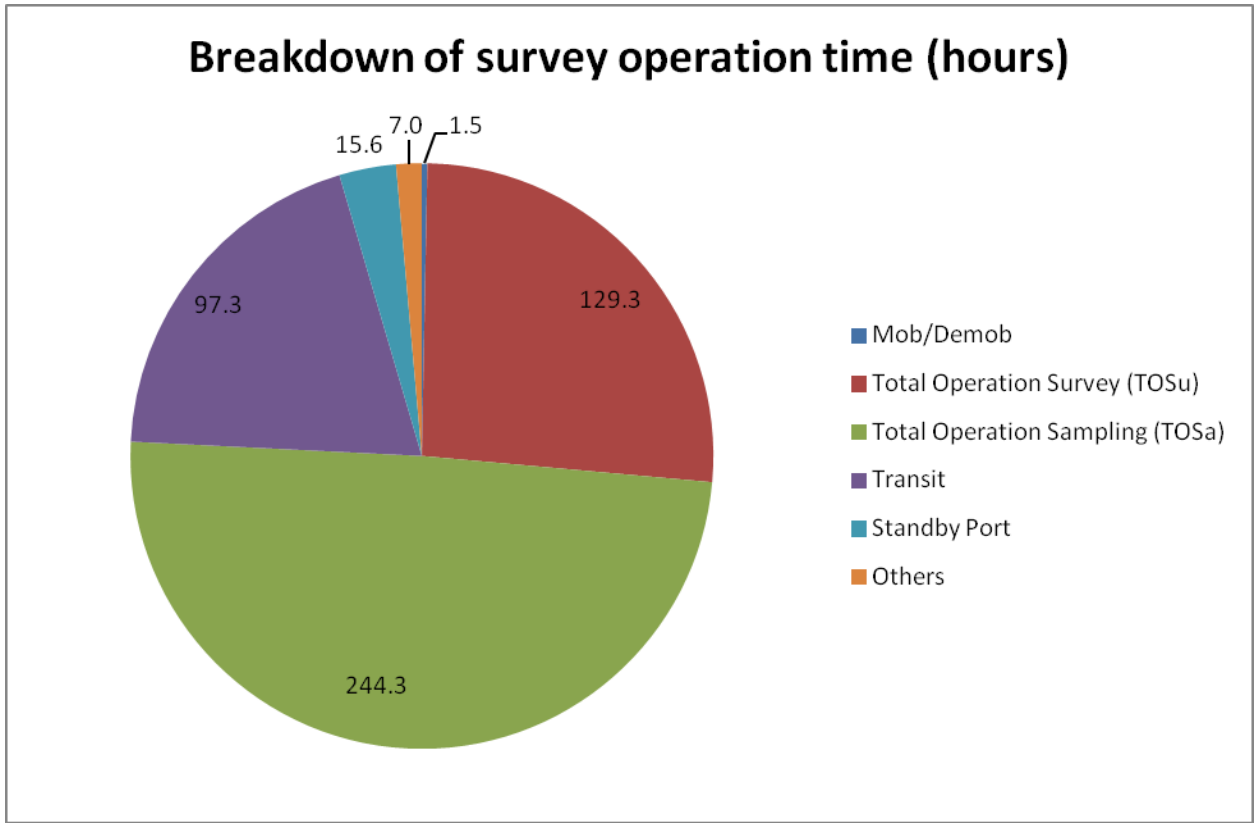


Figure 10 Survey operation time for CEND0613.

About us

Cefas is a multi-disciplinary scientific research and consultancy centre providing a comprehensive range of services in fisheries management, environmental monitoring and assessment, and aquaculture to a large number of clients worldwide.

We have more than 500 staff based in 2 laboratories, our own ocean-going research vessel, and over 100 years of fisheries experience.

We have a long and successful track record in delivering high-quality services to clients in a confidential and impartial manner.
(www.cefas.defra.gov.uk)

Cefas Technology Limited (CTL) is a wholly owned subsidiary of Cefas specialising in the application of Cefas technology to specific customer needs in a cost-effective and focussed manner.

CTL systems and services are developed by teams that are experienced in fisheries, environmental management and aquaculture, and in working closely with clients to ensure that their needs are fully met. (www.cefastechnology.co.uk)

.

Customer focus

With our unique facilities and our breadth of expertise in environmental and fisheries management, we can rapidly put together a multi-disciplinary team of experienced specialists, fully supported by our comprehensive in-house resources.

Our existing customers are drawn from a broad spectrum with wide ranging interests. Clients include:

- international and UK government departments
- the European Commission
- the World Bank
- Food and Agriculture Organisation of the United Nations (FAO)
- oil, water, chemical, pharmaceutical, agro-chemical, aggregate and marine industries
- non-governmental and environmental organisations
- regulators and enforcement agencies
- local authorities and other public bodies

We also work successfully in partnership with other organisations, operate in international consortia and have several joint ventures commercialising our intellectual property

Head office
Centre for Environment, Fisheries & Aquaculture Science
Pakefield Road, Lowestoft,
Suffolk NR33 0HT UK

Tel +44 (0) 1502 56 2244
Fax +44 (0) 1502 51 3865

Web www.cefas.defra.gov.uk

Centre for Environment, Fisheries & Aquaculture Science
Barrack Road, The Nothe
Weymouth, DT4 8UB

Tel +44 (0) 1305 206600
Fax +44 (0) 1305 206601