East Anglia TWO Offshore Windfarm

Appendix 9.3

Benthic Survey Factual Data Report

Environmental Statement
Volume 3

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East Anglia One North (EA1N) and East Anglia Two (EA2)

Benthic Survey Factual Data Report

Bibby HydroMap Project No: 2018-008

Survey Dates: 30/04/2018 – 19/05/2018

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Summary

Under contract to Scottish Power Renewables, Bibby HydroMap, supported by Benthic Solutions Limited, carried out a benthic survey within two areas at the East Anglia One North and East Anglia Two offshore windfarm sites. The survey was designed to characterise the benthic environments of the survey areas defined within the scope of work document (EA2-DEV-CON-1BR-000274 Schedule 1 Technical Scope of Works, dated 29/01/2018), and along with the geophysical survey, to inform cable routing decisions and a number of EIA/HRA assessments including physical processes, marine ecology and archaeology. Survey operations were carried out from the *MV Kommandor Stuart* between the 30th March to the 5th May 2018 and the nearshore samples were acquired from the *MV Lia* between the 14th to the 19th May 2018.

Grab samples were acquired at 65 environmental locations which were subsampled for fauna, particle size and total organic carbon and at 19 contamination locations which were subsampled for physico-chemical samples.

This field report contains details of the field operations completed.

Glossary of Abbreviations

B	Benthic Station
BHL	Bibby HydroMap Limited
BSL	Benthic Solutions Limited
C	Contaminant Station
DCM	Dichloromethane
DG	Day Grab
EA1N	East Anglia One North
EA2	East Anglia Two
ED50	European Datum 1950
EIA	Environmental Impact Assessment
EPSG	European Petroleum Survey Group
FID	Flame Ionisation Detector
GC/MS/MS	Gas Chromatography coupled to Triple Quadrupole Mass Spectrometry
H_2S	Hydrogen Sulphide
HC	Hydrocarbon
HCl	Hydrochloric Acid
HG	Hamon Grab
HM	Heavy Metals
HRA	Hazard Risk Assessment
HSE	Heath, Safety and Environment
ICP-MS	Inductively-Coupled Plasma Mass Spectrometry
ICP-OES	Inductively-Coupled Plasma Optical Emission Spectrometry
ISO	International Organization for Standardization
LAT	Lowest Astronomical Tide
MBES	Multi-beam Echo Sounders
MMO	Marine Management Organisation
MV	Motor Vessel
MW	Megawatt
NE	Natural England
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PSA	Particle Size Analysis
RDL	Redox Discontinuity Layer
SBP	Sub bottom Profiler
SOP	Standard Operating Procedures
SOPEP	Shipboard Oil Pollution Emergency Plan
SSS	Side-scan Sonar
STEB	Sodium Tetraethylborate
TOC	Total Organic Carbon
THC	Total Hydrocarbon Content
UKAS	United Kingdom Accreditation Scheme
UTM	Universal Transverse Mercator
WAS	Wilson Auto-siever
WGS84	World Geodetic System 1984

1. Introduction

Under contract to Scottish Power Renewables, Bibby HydroMap (BHL), supported by Benthic Solutions Limited (BSL), carried out a geophysical and benthic survey within two areas at the East Anglia One North (EA1N) and East Anglia Two (EA2) offshore windfarm sites (Figure 1.1). The survey was designed to characterise the benthic environments of the survey areas defined within the scope of work document (EA2-DEV-CON-1BR-000274 Schedule 1 Technical Scope of Works, dated 29/01/2018), and along with the geophysical survey, to inform cable routing decisions and a number of EIA/HRA assessments including physical processes, marine ecology and archaeology. Benthic survey operations were carried out from the *MV Kommandor Stuart* between the 30th March and the 5th May 2018 and the nearshore samples were acquired from the *MV Lia* between the 14th and the 19th May 2018.

EA2 lies westward of EA1 lying approximately 31km offshore of Lowestoft and occupying an area of 257km^2 with a maximum predicted capacity of 900MW. An EIA Scoping report was issued for consultation in 2017 followed by a Section 42 (Planning Act 2008) consultation in 2018.

EA1N is located to the north of the consented EA1 site and lies approximately 36km offshore of Lowestoft. It occupies an area of 209km^2 with a maximum predicted capacity of 800MW. An EIA scoping report was issued for consultation in November 2017 and will be followed by a Section 42 (Planning Act 2008) consultation in 2019. The programme for EA1N after scoping runs 12 months after EA2.

The objectives of the surveys along the cable corridors were to collect detailed information on:

- Water depths, reduced to LAT, throughout the defined survey areas;
- The nature of any seabed features (natural and man-made);
- Nature of sediments and shallow geological conditions throughout the define survey areas;
- Existence of potential areas of *Sabellaria* reef (using bathymetric/SSS data interpretation); and
- The benthic in-fauna communities and sediment characteristics at a number of locations across the survey areas.

This data report outlines the results obtained during the survey with results presented in the subsequent sections of this document.

1.1 Scope of Work

1.1.1 Objectives

The specific objectives of the benthic survey were to:

- Collect data on the benthic infauna communities and sediment characteristics of the survey areas (in a manner which is respectful of the environment and other marine users);
- Follow a benthic sampling plan and methodology agreed with regulators and provided by the client; and
- Provide the client with processed data and reports to allow the client's EIA/HRA contractors to identify sensitive communities and prepare an EIA baseline.

1.1.2 Geophysical Survey

The survey area was divided into two areas, Area A and Area B (Figure 1.1). Side scan sonar (SSS), multi-beam echosounder (MBES), sub bottom profile (SBP) and magnetometer data were to be acquired for Area A. Side scan sonar and MBES data were to be acquired from Area B.

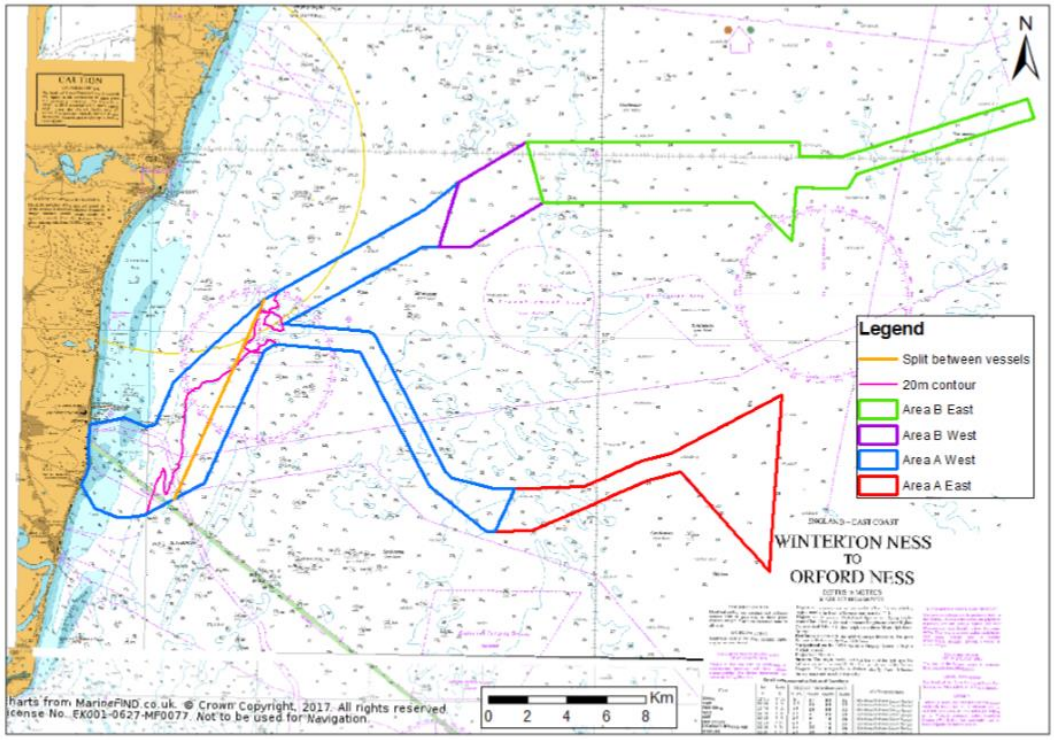


Figure 1.1: Survey Area A and B

1.1.3 Environmental Grab Sampling

The following grab sampling locations were preselected by Scottish Power Renewables after consultation with Natural England (NE) and the Marine Management Organisation (MMO):

- Sixty-five environmental grab sampling locations were subsampled for fauna, total organic carbon (TOC) and particle size analysis (PSA);
- Nineteen grab sampling locations were subsampled for physico-chemical parameters, including PSA, TOC, heavy metals (HM) and hydrocarbons (HC) for contaminant analyses.

1.2 Geodetic Parameters and Datum Shift

Coordinates are referenced to European Datum 1950 (ED50), Universal Transverse Mercator 31˚ North, Central Meridian 3˚ (EPSG 23090).

The spheroid, datum and projection system parameters used by Bibby HydroMap are shown in Table 1.1 below:

Spheroid:	**International 1924**	**Projection:**	**Universal Transverse Mercator (UTM) 31 N**
Datum:	ED50 (EPSG 23090)	Central meridian:	3°
Semi-major axis:	6378388m	Origin latitude:	0°
Inverse flattening:	297	False easting:	500000m
		False northing:	0m
		Central scale factor:	0.9996

Table 1.1: Geodetic Parameters

The coordinate conversion parameters used by Bibby HydroMap to convert from the WGS84 datum to ED50 are as follows (EPSG 1311; Table 1.2):

dX:	+89.5m	Rx:	0.000"
dY:	+93.8m	Ry:	0.000"
dZ:	+123.1m	Rz:	+0.156"
Scale:	-1.2ppm		

Table 1.2: Conversion Parameters

Note: The rotations above (Rx, Ry, Rz) are rotations of the position vector.

2. Field Operations

The environmental fieldwork scope was undertaken by BSL and BHL personnel aboard the *MV Kommandor Stuart* (Figure 2.1) and the *MV Lia* (Figure 2.2).

Figure 2.1: *MV Kommandor Stuart* –Survey Vessel DNV Ice Class C

Figure 2.2: *MV Lia* – Coastal Survey Vessel

The *Kommandor Stuart* was mobilised in Great Yarmouth on the 30th April 2018 and commenced benthic sampling on the 3rd May. All grab sampling operations within the operational working area of the vessel (stations deeper than 15 m) were completed by the 5th May 2018. The remaining six stations were completed with the *MV Lia*, which was mobilised from Lowestoft on the 14th May. The vessel completed two stations on the 15th of May before returning to port due to inclement weather. The last four stations were acquired on the 19th of May after which the environmental sampling equipment and personnel were demobilised.

The summarised timings for the survey are outlined in Table 2.1.

Day	Date	Survey Details
		MV Kommandor Stuart
Monday	30/04/18	Alongside Great Yarmouth. Mobilisation of environmental sampling equipment
Tuesday	01/05/18	Alongside Great Yarmouth. Mobilisation of environmental sampling equipment Alongside Great Yarmouth waiting on weather
Wednesday	02/05/18	Alongside Great Yarmouth waiting on weather Vessel transit to site
Thursday	03/05/18	Commenced environmental sampling operations
Friday	04/05/18	Continued environmental sampling operations
Saturday	05/05/18	Finished environmental sampling Demobilisation of environmental sampling equipment
		MV Lia
Monday	14/05/2018	Mobilised environmental equipment Demobilised geophysical equipment Vessel induction for on signing crew, tool box and test deployment of Hamon grab Alongside Lowestoft waiting on weather
Tuesday	15/05/2018	Transit to site Grab sampling operations, two stations completed Operation stopped due to deteriorating weather Hydraulic hose ruptured on grab sampler recovery Transit to port to wait on weather
Wednesday	16/05/2018	Hydraulic hose replaced Alongside Lowestoft waiting on weather
Thursday	17/05/2018	Alongside Lowestoft waiting on weather
Friday	18/05/2018	Alongside Lowestoft waiting on weather
Saturday	19/05/2018	Transit to site Grab sampling operations, four stations completed Transit to port Demobilised environmental equipment

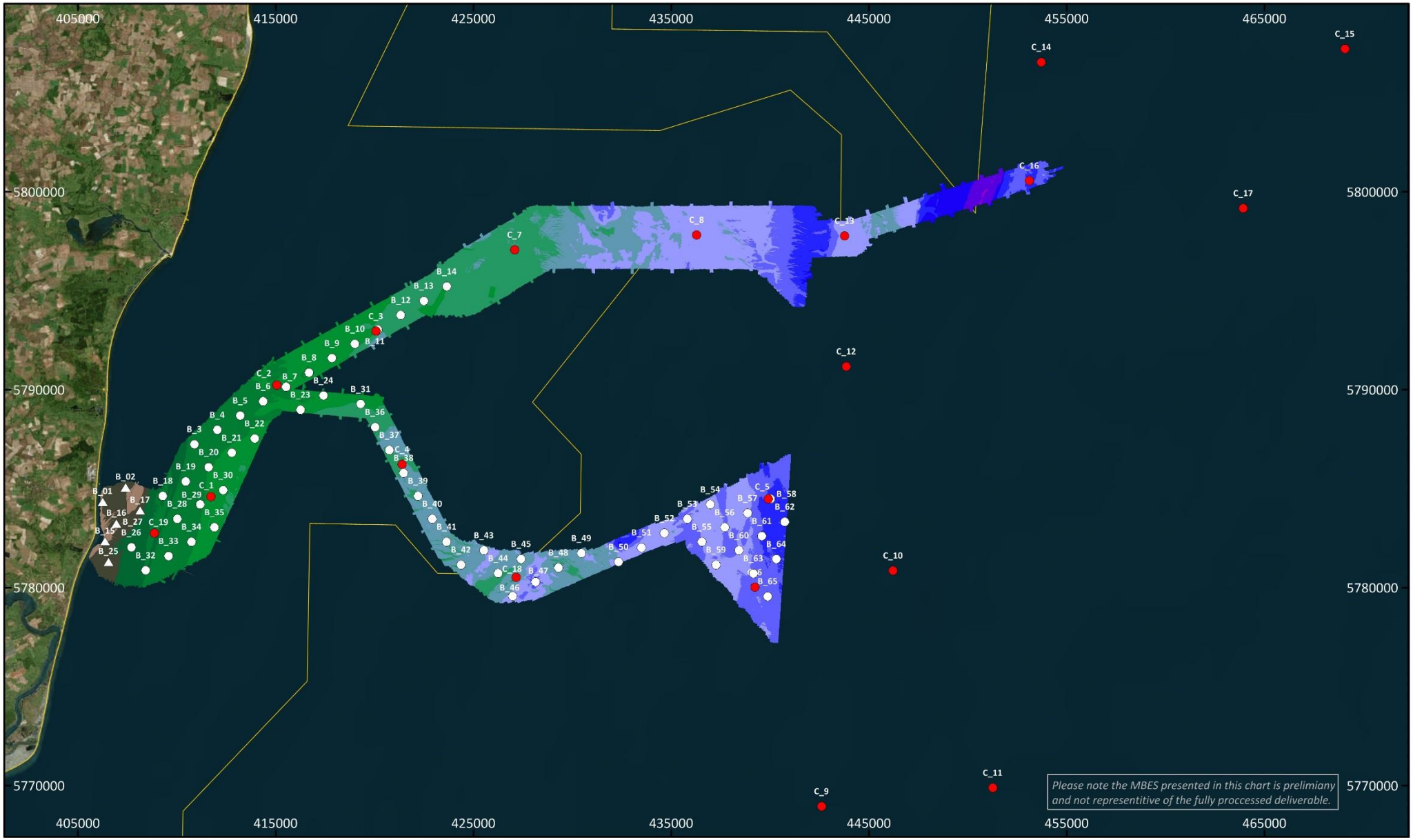
Table 2.1: Summarised Operational Timings

2.1 Environmental Survey Strategy

An environmental sampling plan was agreed prior to the commencement of the survey. The scope of work consisted of 65 benthic stations and 8 contaminant stations within Area A; four contaminant stations within Area B and 7 contaminant stations outside of the geophysical survey area. An overview chart of the environmental sampling locations is presented in *Figure 2.3*.

The acquired geophysical survey data was used to determine the suitability of primary sampling locations prior to grab sampling being undertaken.

In the event of a failed grab attempt, another grab was to be attempted at the same location. If the second failed again, the location was to be moved approx. 50-100m away. If the following third attempt (relocated) also failed, the station was to be aborted. In the case of a change in sediment type that required a change of grab (Day grab or Hamon grab) the grab configuration would be changed after the first attempt. An overview of the acquired samples at each station is summarised in Table 3.1, Table 3.2 and Table 3.3.



Contractors:

BIBBY HYDROMAP

Committed to Quality and Innovation

Benthic Solutions

Client:

SCOTTISHPOWER RENEWABLES

Geodesy:

Datum: WGS84, Projection: UTM 31N, Central Meridian: 3° East

Bathymetry (*metres*)

-5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60 -65

Scale (*Kilometres*)

0 5 10 15

Legend

- Contaminant Sampling Location
- Benthic Sampling Location completed aboard the MV Kommandor Stuart
- Benthic Sampling Location completed aboard the MV Lia
- Outer Thames Estuary SPA

Summary of Sampling Stations around the EA1N and EA2 Survey Area

Rev	Date	Description	Drawn	Interp	APR
0	21/05/2018	1816 Summary Chart	JH	JH	PC
1	28/08/2018	1816 Summary Chart	JH	JH	PC

Figure 2.3 Environmental Sampling Locations

2.2 Environmental Survey Equipment

Benthic Solutions mobilised the following equipment:

- 0.1m² Hamon grab;
- 0.1m² Day grab (back-up);
- Environmental processing package including sub-sampling tools, trays, and consumables for environmental sampling;
- *Wilson* Auto-siever for biological processing over 1mm mesh sieve.

2.3 Seabed Grab Sampling

All benthic and contaminant samples were acquired using a 0.1m^2 Hamon grab sampler (Figure 2.4). An initial deployment with the Day grab failed to acquire a sample due to the gravel within the sediment, subsequently the Hamon grab was used to acquire all samples.

Figure 2.4: Hamon Grab Sediment Sampler

Samples were subject to quality control on recovery and were retained in the following circumstances:

- Water above sample was undisturbed;
- Bucket closure complete allowing no sediment washout;
- Sampler was retrieved perfectly upright and had not fouled in any way;
- Inspection/access door had closed properly enclosing the sample;
- No disruption of the sample through striking the side of the vessel;
- No contamination in the sample by other sampling equipment;
- Sample was taken inside the acceptable target range (<10m);
- No hagfish (*Myxine glutinosa*) and/or mucus coagulants.

Pre-deployment procedures included the cleaning of the inner stainless grab bucket and sampling tools were generally grease-free. On recovery, the whole sample was inspected, described and photographed prior to processing. Key observations from samples were colour, sediment classification, layering (including Redox Discontinuity Layers; RDLs), odour (including the presence of H_2S), obvious fauna and evidence of bioturbation and evidence of anthropogenic debris.

2.3.1 Sample Processing

Sub-sampling of physico-chemistry and fauna was undertaken from the Hamon grab. For benthic stations the following sub-samples were retrieved:

- Total Organic Carbon (TOC), 0-2cm (stored in doubled lined ziplock plastic bag);
- Particle Size Analysis (PSA), 0-5cm (stored in doubled lined ziplock plastic bag);
- The remaining sediment was retained for fauna.

For contaminant stations the following material was retrieved from the sediment surface of contaminant samples:

- Hydrocarbon analysis (HC), 0-2cm, two replicates (stored in a sterile clean capped glass jars);
- Heavy & trace metal (HM), 0-2cm (stored in doubled lined ziplock plastic bag);
- Total Organic Carbon (TOC) 0-2cm (stored in doubled lined ziplock plastic bag);
- Particle Size Analysis (PSA), 0-5cm (stored in doubled lined ziplock plastic bag);
- Spare sample, 0-2cm (stored in doubled lined ziplock plastic bag).

The preservation of materials was undertaken using standard techniques. All physico-chemical samples were stored in appropriate containers (i.e. glass for hydrocarbons, PCBs and organotins, and plastics for metals, TOC, and PSA) and immediately frozen and stored (< -18^{o}C) for later transportation (frozen) to the laboratory on demobilisation.

Faunal samples were sieved using a Wilson Autosiever (WAS) through a 1000µm sieve. Fauna samples were fixed and stained in 5% buffered formalin and a vital stain (Rose Bengal) for storage and transportation. All biological samples were double-labelled, with internal tags.

Photographs from the field sampling operations are given in the final environmental baseline report.

2.4 Heath, Safety, Environmental and Quality

The scope of work was completed in line with BSL's and BHL's Health and Safety Policies and Standard Operating Procedures (SOP).

All field personnel maintain approved sea survival and offshore medical certificates (ENG1) and were fully trained and qualified to fulfil the environmental project requirements.

Prior to the survey, BSL personnel read and understood the following documents:

- HSE plan for the project
- Emergency Response Procedure
- Task Specific Risk Assessment
- BSL HSE Policy (OHSAS 18001)
- BSL Quality Policy (ISO 9001)
- BSL Environmental Policy (ISO 14001)

Prior to operations commencing, a toolbox talk was completed in the presence of all personnel involved.

2.4.1 Incidents

Two incidents were recorded during the nearshore sampling onboard the *MV Lia*. The first incident occurred on the 15th May 2018 during recovery of the Hamon grab. At stations B02 the grab sample failed to trigger and personnel on deck recorded increasing adverse weather conditions, the decision to abort the operation was made. On recovering the grab to deck, the equipment snagged a hydraulic hose on the crane. The hydraulics were stopped and the Shipboard Oil Pollution Emergency Plan (SOPEP) kit was used to contain the leak and clean the spill (less than 1L).

The second incident occurred on the 15th May 2018 during transit back to port due to bad weather. The environmental scientist onboard reported pain in the knee and an inability to straighten their leg. The vessel continued its transit into port to acquire medical assistance. As the pain increased it was decided to take the person to the accident and emergency facility at the James Paget Hospital and another environmental scientist was mobilised to complete the survey.

No operational lost time was reported due to these incidents.

3. Sample Acquisition

3.1 Completed Grab Sampling

Fifty-nine of the sixty-five benthic stations (Table 3.1) and all nineteen contaminant stations (*Table 3.2*) were successfully sampled using the Hamon grab onboard the *MV Kommandor Stuart*, with a full suite of samples being acquired at each location.

The remaining six benthic stations, which were situated in water depths too shallow for the *MV Kommandor Stuart* to work, were acquired with the Hamon grab onboard the *MV Lia*. The positions of three benthic stations had to be adjusted to acquire samples. Station B02 was moved 250 m south due to a magnetometer contact with subsea cables. Station B15 was moved off a shallow inaccessible area of exposed bedrock. Station B16 was moved off an area of exposed bedrock.

Station	Actual Sampling Coordinates		Samples Acquired	Comments
	Easting [m]	Northing [m]		
B03	410886.08	5787238.00	PSA, TOC, Fauna (F1)	
B04	412047.51	5787968.08	PSA, TOC, Fauna (F1)	Day grab was unsuccessful. Switched to Hamon grab
B05	413203.03	5788692.14	PSA, TOC, Fauna (F1)	
B06	414370.02	5789421.62	PSA, TOC, Fauna (F1)	
B07	415527.93	5790144.66	PSA, TOC, Fauna (F1)	
B08	416685.52	5790865.55	PSA, TOC, Fauna (F1)	
B09	417845.39	5791594.68	PSA, TOC, Fauna (F1)	
B10	419009.90	5792316.54	PSA, TOC, Fauna (F1)	
B11	420167.52	5793046.97	PSA, TOC, Fauna (F1)	
B12	421326.71	5793769.26	PSA, TOC, Fauna (F1)	
B13	422485.57	5794491.74	PSA, TOC, Fauna (F1)	
B14	423642.56	5795217.20	PSA, TOC, Fauna (F1)	
B18	409292.80	5784633.11	PSA, TOC, Fauna (F1)	
B19	410453.42	5785360.41	PSA, TOC, Fauna (F1)	
B20	411612.97	5786085.49	PSA, TOC, Fauna (F1)	
B21	412772.56	5786813.16	PSA, TOC, Fauna (F1)	
B22	413932.63	5787532.63	PSA, TOC, Fauna (F1)	
B23	416253.77	5788984.36	PSA, TOC, Fauna (F1)	
B24	417411.35	5789708.53	PSA, TOC, Fauna (F1)	
B26	407695.18	5782023.73	PSA, TOC, Fauna (F1)	
B27	408859.40	5782748.80	PSA, TOC, Fauna (F1)	
B28	410017.52	5783471.92	PSA, TOC, Fauna (F1)	Two attempts, grab door not closed on recovery
B29	411175.80	5784195.07	PSA, TOC, Fauna (F1)	
B30	412334.52	5784913.47	PSA, TOC, Fauna (F1)	
B31	419296.87	5789275.17	PSA, TOC, Fauna (F1)	
B32	408426.46	5780859.75	PSA, TOC, Fauna (F1)	
B33	409582.26	5781591.12	PSA, TOC, Fauna (F1)	
B34	410738.40	5782308.46	PSA, TOC, Fauna (F1)	
B35	411898.11	5783033.37	PSA, TOC, Fauna (F1)	
B36	420015.72	5788112.44	PSA, TOC, Fauna (F1)	
B37	420744.08	5786955.09	PSA, TOC, Fauna (F1)	
B38	421467.15	5785789.36	PSA, TOC, Fauna (F1)	
B39	422190.41	5784630.43	PSA, TOC, Fauna (F1)	
B40	422914.45	5783468.78	PSA, TOC, Fauna (F1)	

Station	Actual Sampling Coordinates		Samples Acquired	Comments
	Easting [m]	Northing [m]		
B41	423638.50	5782306.12	PSA, TOC, Fauna (F1)	
B42	424362.09	5781146.37	PSA, TOC, Fauna (F1)	
B43	425521.04	5781872.33	PSA, TOC, Fauna (F1)	
B44	426248.39	5780713.08	PSA, TOC, Fauna (F1)	
B45	427408.39	5781441.38	PSA, TOC, Fauna (F1)	
B46	426971.80	5779554.86	PSA, TOC, Fauna (F1)	
B47	428137.93	5780284.31	PSA, TOC, Fauna (F1)	
B48	429296.77	5781009.10	PSA, TOC, Fauna (F1)	
B49	430454.61	5781732.21	PSA, TOC, Fauna (F1)	
B50	432340.57	5781299.62	PSA, TOC, Fauna (F1)	
B51	433499.44	5782023.93	PSA, TOC, Fauna (F1)	
B52	434660.83	5782747.41	PSA, TOC, Fauna (F1)	
B53	435818.58	5783476.35	PSA, TOC, Fauna (F1)	
B54	436979.90	5784204.50	PSA, TOC, Fauna (F1)	
B55	436545.00	5782316.09	PSA, TOC, Fauna (F1)	
B56	437704.79	5783043.00	PSA, TOC, Fauna (F1)	
B57	438860.52	5783766.58	PSA, TOC, Fauna (F1)	
B58	440019.22	5784481.97	PSA, TOC, Fauna (F1)	
B59	437270.27	5781155.37	PSA, TOC, Fauna (F1)	
B60	438427.62	5781879.27	PSA, TOC, Fauna (F1)	
B61	439588.77	5782601.34	PSA, TOC, Fauna (F1)	
B62	440740.18	5783319.80	PSA, TOC, Fauna (F1)	
B63	439145.11	5780708.32	PSA, TOC, Fauna (F1)	Two attempts, cobble in grab jaw on first attempt
B64	440305.39	5781434.20	PSA, TOC, Fauna (F1)	
B65	439875.07	5779553.88	PSA, TOC, Fauna (F1)	

Table 3.1: Acquired Benthic Samples; MV Kommandor Stuart

Station	Actual Sampling Coordinates		Sample Acquired	Comments
	Easting [m]	Northing [m]		
C01	415056.84	5790240.48	PSA, TOC, HC1, HC2, HM1, Spare	
C02	420071.29	5792959.03	PSA, TOC, HC1, HC2, HM1, Spare	
C03	421392.97	5786222.78	PSA, TOC, HC1, HC2, HM1, Spare	
C04	439901.29	5784477.57	PSA, TOC, HC1, HC2, HM1, Spare	
C05	439218.71	5780009.23	PSA, TOC, HC1, HC2, HM1, Spare	
C06	427077.96	5797066.70	PSA, TOC, HC1, HC2, HM1, Spare	
C07	436284.56	5797820.16	PSA, TOC, HC1, HC2, HM1, Spare	
C08	442600.84	5768951.79	PSA, TOC, HC1, HC2, HM1, Spare	
C09	446218.30	5780861.90	PSA, TOC, HC1, HC2, HM1, Spare	
C10	451259.06	5769883.02	PSA, TOC, HC1, HC2, HM1, Spare	
C11	443853.13	5791179.76	PSA, TOC, HC1, HC2, HM1, Spare	
C12	443760.93	5797768.54	PSA, TOC, HC1, HC2, HM1, Spare	
C13	453709.48	5806546.64	PSA, TOC, HC1, HC2, HM1, Spare	
C14	469063.30	5807222.17	PSA, TOC, HC1, HC2, HM1, Spare	
C15	453105.88	5800544.99	PSA, TOC, HC1, HC2, HM1, Spare	
C16	463925.88	5799170.72	PSA, TOC, HC1, HC2, HM1, Spare	
C17	427159.03	5780519.73	PSA, TOC, HC1, HC2, HM1, Spare	
C18	408858.91	5782746.22	PSA, TOC, HC1, HC2, HM1, Spare	
C19	415056.84	5790240.48	PSA, TOC, HC1, HC2, HM1, Spare	

Table 3.2: Acquired Contaminant Samples; *MV Kommandor Stuart*

Station	Actual Sampling Coordinates		Sample Acquired	Comments
	Easting [m]	Northing [m]		
B01	406247.47	5784336.97	PSA, TOC, Fauna (F1)	
B02	407409.81	5785066.79	PSA, TOC, Fauna (F1)	Moved 250m south due to magnetometer contact of cables
B15	406368.87	5782338.01	PSA, TOC, Fauna (F1)	Moved to accessible area off exposed rock
B16	406947.22	5783240.46	PSA, TOC, Fauna (F1)	Moved off exposed bedrock
B17	408136.49	5783899.00	PSA, TOC, Fauna (F1)	
B25	406542.76	5781302.68	PSA, TOC, Fauna (F1)	

Table 3.3: Acquired Benthic Samples; *MV Lia*

No interpretation of the results was required for this project.

4. Analysis and Results

This section outlines the different methods used in laboratories to acquire the physico-chemistry and macrofaunal datasets. No interpretation was required for this operation.

4.1 Particle Size Analysis

4.1.1 Methodology

Samples from each station were homogenised and split into small sub-samples for laser diffraction, and the remaining material was passed through stainless steel sieves with mesh apertures of 8000µm, 4000µm, 2000µm and 1000µm. Any material retained on the sieve, such as small shells, shell fragments and stones were removed, and the weight was recorded.

The small sub-sample was wet screened through a 1000µm sieve and determined using a Malvern Mastersizer 2000 particle sizer. The results obtained by a laser sizer have been previously validated by comparison with independent assessment by wet sieving (Hart, 1996). The range of sieve sizes, together with their Wentworth and Folk classifications are given in Table 4.1. For additional quality control, all datasets were run through the Mastersizer in triplicate and the variations in sediment distributions assessed to be within the 95% percentile.

Aperture in Microns	Sediment Classification	
	Wentworth (1922)	Folk (1954)
8000	Pebble	Gravel
4000		
2000	Granule	
1400	Very Coarse Sand	Sands
1000		
710	Coarse Sand	
500		
355	Medium Sand	
250		
180	Fine Sand	
125		
90	Very Fine Sand	
63		
44	Coarse Silt	Mud
31.5		
22	Medium Silt	
15.6		
11	Fine Silt	
7.8		
5.5	Very Fine Silt	
3.9		
2	Clay	
1		

Table 4.1: Sieve Apertures with Wentworth and Folk Classifications

The separate assessments of the fractions above and below 1mm were combined using a computer programme. This followed a manual input of the sieve results for fractions 16mm-8mm, 8mm-4mm, 4mm-2mm and 2mm-1mm fractions and the electronic data captured by the Mastersizer below 2mm.

Samples from each station had the percent of fines (% <63µm), sand (% 63µm – 2mm) and gravel (% >2mm) calculated, where the samples were also classified using the Wentworth and Folk classification systems.

4.1.2 Data

Station	Fines [%]	Sands [%]	Gravel [%]	Wentworth Scale	Folk
B01	3.55	94.18	2.27	Fine Sand	Slightly gravelly sand
B02	1.31	95.99	2.70	Fine Sand	Slightly gravelly sand
B03	50.35	48.80	0.85	Coarse Silt	Sandy mud
B04	33.00	31.10	35.91	Medium Sand	Muddy sandy gravel
B05	22.35	43.45	34.19	Medium Sand	Muddy sandy gravel
B06	26.11	61.23	12.67	Fine Sand	Gravelly muddy sand
B07	21.71	44.35	33.95	Medium Sand	Muddy sandy gravel
B08	0.75	96.95	2.30	Medium Sand	Slightly gravelly sand
B09	0.41	46.44	53.16	Granule	Sandy gravel
B10	0.00	98.70	1.30	Medium Sand	Slightly gravelly sand
B11	2.01	62.15	35.84	Very Coarse Sand	Sandy Gravel
B12	5.11	58.16	36.74	Very Coarse Sand	Sandy Gravel
B13	8.41	71.48	20.11	Coarse Sand	Gravelly muddy sand
B14	2.97	59.66	37.37	Very Coarse Sand	Sandy Gravel
B15	0.00	99.35	0.65	Medium Sand	Sand
B16	1.35	94.93	3.72	Medium Sand	Slightly gravelly sand
B17	1.07	95.61	3.33	Fine Sand	Slightly gravelly sand
B18	7.25	84.92	7.83	Coarse Sand	Gravelly sand
B19	88.72	11.29	0.00	Fine Silt	Sandy mud
B20	80.03	19.69	0.28	Medium Silt	Sandy mud
B21	13.02	63.52	23.46	Coarse Sand	Gravelly muddy sand
B22	17.66	47.11	35.24	Coarse Sand	Muddy sandy gravel
B23	0.00	96.46	3.54	Medium Sand	Slightly gravelly sand
B24	0.37	54.61	45.02	Very Coarse Sand	Sandy gravel
B25	1.46	98.05	0.49	Fine Sand	Sand
B26	25.08	74.62	0.30	Very Fine Sands	Muddy sand
B27	80.54	18.57	0.89	Fine Silt	Sandy mud
B28	81.48	17.78	0.74	Medium Silt	Sandy mud
B29	88.72	11.28	0.00	Fine Silt	Sandy mud
B30	90.21	9.79	0.00	Fine Silt	Mud
B31	1.35	82.45	16.20	Coarse Sand	Gravelly sand
B32	47.27	52.13	0.60	Coarse Silt	Muddy sand
B33	76.20	23.74	0.06	Medium Silt	Sandy mud
B34	86.33	13.44	0.23	Fine Silt	Sandy mud
B35	79.43	20.57	0.00	Medium Silt	Sandy mud
B36	23.10	46.10	30.81	Medium Sand	Muddy sandy gravel
B37	14.12	79.37	6.52	Medium Sand	Gravelly muddy sand
B38	1.45	82.88	15.67	Coarse Sand	Gravelly sand
B39	0.00	94.96	5.04	Coarse Sand	Gravelly sand
B40	0.00	90.39	9.61	Very Coarse Sand	Gravelly sand
B41	24.09	59.91	16.00	Fine Sand	Gravelly muddy sand

Station	Fines [%]	Sands [%]	Gravel [%]	Wentworth Scale	Folk
B42	2.24	95.94	1.82	Coarse Sand	Slightly gravelly sand
B43	22.40	59.00	18.59	Fine Sand	Gravelly muddy sand
B44	0.00	99.32	0.69	Medium Sand	Sand
B45	0.00	92.25	7.75	Coarse Sand	Gravelly sand
B46	0.00	99.13	0.87	Medium Sand	Sand
B47	0.90	92.28	6.82	Medium Sand	Gravelly sand
B48	0.00	96.12	3.89	Coarse Sand	Slightly gravelly sand
B49	0.00	98.66	1.35	Coarse Sand	Slightly gravelly sand
B50	0.81	96.07	3.13	Coarse Sand	Slightly gravelly sand
B51	5.06	67.18	27.77	Coarse Sand	Gravelly sand
B52	17.76	77.17	5.07	Fine Sand	Gravelly muddy sand
B53	8.92	72.04	19.04	Coarse Sand	Gravelly muddy sand
B54	0.00	95.85	4.16	Medium Sand	Slightly gravelly sand
B55	6.95	80.03	13.03	Medium Sand	Gravelly sand
B56	10.90	85.79	3.31	Medium Sand	Slightly gravelly muddy sand
B57	3.64	67.82	28.55	Coarse Sand	Gravelly sand
B58	12.29	59.24	28.47	Coarse Sand	Gravelly muddy sand
B59	9.69	63.23	27.08	Coarse Sand	Gravelly muddy sand
B60	0.00	89.63	10.37	Coarse Sand	Gravelly sand
B61	2.35	94.82	2.84	Coarse Sand	Slightly gravelly sand
B62	31.04	44.33	24.63	Medium Sand	Gravelly muddy sand
B63	1.84	69.37	28.79	Very Coarse Sand	Gravelly sand
B64	0.00	97.99	2.01	Coarse Sand	Slightly gravelly sand
B65	10.13	59.60	30.28	Coarse Sand	Muddy sandy gravel

Table 4.2: Particle Size Analysis (PSA) Results

4.2 Total Organic Carbon

4.2.1 Methodology

Total organic carbon (TOC) was analysed using an Eltra combustion method. The samples from each station were treated with 10% HCl to remove inorganic carbon (carbonates), before being washed to remove residual acids then dried. A Carbon Analyser heated the sample in a flow of oxygen, where any carbon present was converted to carbon dioxide which was measured by infra-red absorption. The percentage of carbon was then calculated with respect to the original sample weight (% w/w C). The range for the method is 0.01 - 100%, and is currently being evaluated under the UKAS accreditation scheme.

4.2.2 Data

Station	TOC [% w/w C]	Station	TOC [% w/w C]	Station	TOC [% w/w C]
B01	<0.10	**B29**	0.57	**B57**	<0.10
B02	<0.10	**B30**	0.81	**B58**	<0.10
B03	0.38	**B31**	<0.10	**B59**	<0.10
B04	0.15	**B32**	0.15	**B60**	<0.10
B05	0.31	**B33**	0.79	**B61**	<0.10
B06	0.11	**B34**	0.76	**B62**	0.11
B07	0.12	**B35**	0.84	**B63**	<0.10
B08	<0.10	**B36**	<0.10	**B64**	<0.10
B09	<0.10	**B37**	<0.10	**B65**	0.12
B10	<0.10	**B38**	<0.10	**C01**	0.77
B11	<0.10	**B39**	<0.10	**C02**	<0.10
B12	<0.10	**B40**	<0.10	**C03**	0.12
B13	<0.10	**B41**	<0.10	**C04**	<0.10
B14	0.11	**B42**	<0.10	**C05**	<0.10
B15	<0.10	**B43**	<0.10	**C06**	<0.10
B16	<0.10	**B44**	<0.10	**C07**	<0.10
B17	<0.10	**B45**	<0.10	**C08**	<0.10
B18	<0.10	**B46**	<0.10	**C09**	<0.10
B19	0.84	**B47**	<0.10	**C10**	<0.10
B20	0.79	**B48**	<0.10	**C11**	<0.10
B21	<0.10	**B49**	<0.10	**C12**	<0.10
B22	0.12	**B50**	<0.10	**C13**	<0.10
B23	<0.10	**B51**	<0.10	**C14**	<0.10
B24	<0.10	**B52**	<0.10	**C15**	<0.10
B25	<0.10	**B53**	0.16	**C16**	<0.10
B26	<0.10	**B54**	<0.10	**C17**	<0.10
B27	0.52	**B55**	<0.10	**C18**	<0.10
B28	0.58	**B56**	<0.10	**C19**	<0.10

Table 4.3: Total Organic Carbon (TOC) Results

4.3 Hydrocarbon Analysis

4.3.1 Methodology

To extract the hydrocarbons from the sediment, a sample (15±0.1g) from each station was spiked with an internal standard solution containing: aliphatics - heptamethylnonane, 1-chlorooctadecane and squalane. The sample was then wet vortex extracted using three successive aliquots of dichloromethane (DCM)/methanol. The extracts were combined, and water partitioned to remove the methanol and any excess water from the sample. Solvent extracts were chemically dried and then reduced to approximately 1ml using a Kuderna Danish evaporator with micro Snyder

Analysis of the total hydrocarbon content (THC) was then performed using an Agilent 6890 with a Flame Ionisation Detector (FID) detector. Appropriate column and Gas Chromatography conditions were used to provide sufficient chromatographic separation of all analytes and the required sensitivity.

Polycyclic aromatic hydrocarbons (PAH) were extracted from the sediment by solvent extraction. 15ml of methanol and 60ml of DCM were added to an aliquot of approximately 15g and mixed on a magnetic stirring plate for 1 hour. The solvent extract was then water partitioned and evaporated to 1ml using a Kuderna Danish. A third of the column was made up with the DCM/silica slurry and subsequently eluted with 9ml of DCM and 3ml of Pentane. The 1ml of DCM extract was then eluted through the column with a further 1ml of DCM and 2ml of pentane giving a final extract of 4ml (DCM:pentane).

A separate sub-sample was taken for analysis of moisture content by drying at 120°C for 8 hours. The moisture content was later used to convert the hydrocarbon concentrations from wet weight to dry weight.

4.3.2 Data

Station	THC [mg/kg]	Total 2-6 ring PAH [ng/g]	Naphthalene [ng/g]	Acenaphthylene [ng/g]	Acenaphthene [ng/g]	Fluorene [ng/g]	Phenanthrene [ng/g]
C01	53.5	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C02	26.2	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C03	36.6	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C04	33.4	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C05	35.1	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C06	35.8	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C07	33.9	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C08	32.0	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C09	32.3	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C10	31.8	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C11	32.5	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C12	34.3	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C13	34.9	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C14	32.6	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C15	24.5	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C16	28.2	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C17	26.9	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C18	30.6	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08
C19	28.5	<1.28	<0.08	<0.08	<0.08	<0.08	<0.08

Table 4.4: Total Hydrocarbon Content (THC) Results

Station	Fluoranthene [ng/g]	Pyrene [ng/g]	Benzo[a]-anthracene [ng/g]	Chrysene [ng/g]	Benzo[b]-fluoranthene [ng/g]	Benzo[k]-fluoranthene [ng/g]	Benzo[a]-pyrene [ng/g]	Indeno[123,cd]pyrene [ng/g]	Dibenzo[a,h]anthracene [ng/g]	Benzo[ghi]perylene [ng/g]
C01	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C02	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C03	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C04	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C05	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C06	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C07	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C09	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C10	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C11	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C12	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C13	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C14	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C15	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C16	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C17	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C18	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C19	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

Table 4.5: Total Hydrocarbon Content (THC) Results

4.4 Heavy and Trace Metals

4.4.1 Methodology

Samples from each station were homogenised and a 50g portion of each sample was air dried at room temperature. Each sample was then ground down to a fine powder (<100µm) using a metal free mortar and pestle. A clean sand sample was hand ground prior to preparation of the field samples as a blank.

Approximately 1g of the sediment was accurately weighed out and transferred to a beaker and wet with approximately 20ml of distilled water. Hydrochloric acid (6ml) and nitric acid (2ml) were added and the covered sample left to digest for 4 hours in a steam bath.

After digestion, the sample was filtered through a Whatman 542 filter paper into a 100ml standard flask. The watch-glass and beaker were rinsed thoroughly, transferring the washings to the filter paper. The filter paper was rinsed until the volume was approximately 90ml. The filter funnel was rinsed into the flask and then the flask was made up to volume and mixed. The filtrate was then analysed by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) and/or Inductively Coupled Plasma Mass Spectrometry (ICP-MS) to determine the weight of any heavy and trace metals.

4.4.2 Data

Station	Arsenic (HF-MS) [mg/kg]	Cadmium (HF-MS) [mg/kg]	Chromium (HF-MS) [mg/kg]	Copper (HF-MS) [mg/kg]	Lead (HF-MS) [mg/kg]	Nickel (HF-MS) [mg/kg]	Vanadium (HF-MS) [mg/kg]	Zinc (HF-MS) [mg/kg]	Aluminium (Seds) [mg/kg]	Iron (Seds) [mg/kg]	Barium (Seds) [mg/kg]	Tin (HF-MS) [mg/kg]
C01	12.6	0.80	33.8	52.2	45.5	22.8	45.4	132.3	10800	23600	95.0	4.2
C02	34.2	0.26	17.1	10.1	7.7	13.6	38.1	23.7	2290	29300	22.4	0.7
C03	31.7	0.07	9.7	7.0	7.7	6.6	35.5	24.0	2090	15700	31.6	<0.5
C04	29.0	0.05	7.4	5.3	5.8	6.2	31.2	19.8	1110	10800	10.3	<0.5
C05	43.9	0.08	13.9	6.5	8.1	8.2	52.3	24.8	2950	22900	26.9	<0.5
C06	28.2	0.05	20.5	10.2	5.2	14.2	28.4	13.7	1440	17100	22.6	0.6
C07	42.4	0.08	6.9	5.6	7.5	8.4	41.0	21.6	1040	13900	17.4	<0.5
C08	16.4	<0.04	6.0	5.5	4.7	4.2	21.4	14.2	946	9110	15.2	<0.5
C09	8.9	<0.04	4.2	3.8	2.8	3.5	10.1	8.1	797	4930	12.3	<0.5
C10	24.0	0.07	5.5	3.4	4.5	5.8	25.5	11.9	1270	9130	14.9	<0.5
C11	7.5	<0.04	4.0	5.1	2.4	3.3	8.5	7.1	797	4660	12.6	<0.5
C12	28.1	<0.04	8.2	6.2	6.1	6.5	32.3	18.3	2430	18500	21.0	<0.5
C13	20.3	0.05	7.6	6.2	5.4	4.6	21.3	14.9	2060	10500	14.3	<0.5
C14	34.9	0.05	4.4	5.0	5.2	5.3	29.9	15.4	1080	16500	15.6	<0.5
C15	9.7	<0.04	6.5	4.4	2.9	3.9	13.6	10.6	1540	6590	14.8	<0.5
C16	65.6	0.07	7.5	4.9	5.4	10.2	49.0	22.6	1750	47500	18.9	<0.5
C17	16.6	<0.04	4.5	3.6	2.9	3.8	15.7	9.6	1080	8530	14.5	<0.5
C18	14.1	0.06	10.0	6.9	6.3	5.2	26.6	20.1	2500	10800	17.6	<0.5
C19	20.8	0.10	14.4	7.8	15.7	10.7	34.0	41.3	5210	15800	32.7	0.7

Table 4.6: Heavy and Trace Metals Results

4.5 Polychlorinated Biphenyl (PCB)

4.5.1 Methodology

For each station, 2g of air-dried and ground sample was spiked with internal standards, ultrasonically solvent extracted and concentrated under nitrogen. A clean-up stage was employed to remove contaminants that may interfere with the analysis. The sample extract was analysed by Gas Chromatography coupled to a triple quadrupole mass spectrometer (GC/MS/MS). Quantification was performed by comparison with a solution containing each of the targeted compounds, normalised to the internal standards.

4.5.2 Data

Station	PCB28 [µg/kg]	PCB52 [µg/kg]	PCB101 [µg/kg]	PCB118 [µg/kg]	PCB138 [µg/kg]	PCB153 [µg/kg]	PCB180 [µg/kg]
C01	0.94	0.86	0.27	0.19	<0.08	0.20	0.09
C02	0.30	0.26	0.10	<0.08	<0.08	<0.08	<0.08
C03	0.33	0.28	0.09	<0.08	<0.08	<0.08	<0.08
C04	0.10	0.11	<0.08	<0.08	<0.08	<0.08	<0.08
C05	0.25	0.20	<0.08	<0.08	<0.08	<0.08	<0.08
C06	0.39	0.33	0.08	<0.08	<0.08	<0.08	<0.08
C07	0.12	0.11	<0.08	<0.08	<0.08	<0.08	<0.08
C08	0.11	0.09	<0.08	<0.08	<0.08	<0.08	<0.08
C09	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C10	0.17	0.12	<0.08	<0.08	<0.08	<0.08	<0.08
C11	<0.08	0.02	<0.08	<0.08	<0.08	<0.08	<0.08
C12	0.31	0.26	<0.08	<0.08	<0.08	<0.08	<0.08
C13	0.24	0.21	<0.08	<0.08	<0.08	<0.08	<0.08
C14	0.12	0.09	<0.08	<0.08	<0.08	<0.08	<0.08
C15	0.17	0.15	<0.08	<0.08	<0.08	<0.08	<0.08
C16	0.17	0.16	<0.08	<0.08	<0.08	<0.08	<0.08
C17	0.06	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
C18	0.29	0.21	<0.08	<0.08	<0.08	<0.08	<0.08
C19	0.40	0.34	0.11	<0.08	<0.08	<0.08	<0.08

Table 4.7: Polychlorinated Biphenyl (PCB) Results

4.6 Organotins

4.6.1 Methodology

From each station, 5g of sample was digested with hydrochloric acid and methanol before being extracted into toluene. The extract was then derivatised using sodium tetraethylborate (STEB) before concentration and a copper/silica clean-up was performed. The extract was analysed by Gas Chromatography Mass Spectrometry (GC/MS) and quantified by comparing the results against a calibration curve for each of the target analytes.

4.6.2 Data

Station	Dibutyltin [µg/kg]	Tributyltin [µg/kg]
C01	<5	<5
C02	<1	1.15
C03	<1	<1
C04	<1	<1
C05	<1	<1
C06	<1	<1
C08	<1	<1
C09	<1	<1
C10	<1	<1
C11	<1	<1
C12	<1	<1
C13	<1	<1
C14	<1	<1
C15	<1	<1
C16	<1	<1
C17	<1	<1
C18	<1	<1
C19	<1	<1

Table 4.8: Organotin Results

4.7 Macrofauna

4.7.1 Methodology

All samples were carefully washed in fresh water over a 1mm mesh until all formalin was removed. The samples were then carefully sorted using low power microscopes where necessary, and all fauna removed into pots containing the major groups (e.g. Mollusca, Annelida, Crustacea, Echinodermata and “others”) in 70% alcohol. Quality control procedures included the re-sorting of a random selection of the samples (typically 10%) on the understanding that if specimens equated to more than 5% of the total specimens found (or more than 10% of any one group), then the relevant batch of samples were all re-sorted; and cross checked with the identification of difficult specimens or species.

All the sorted organisms were identified to species level where possible, or the lowest practical taxonomic level, and enumerated (partial specimens were only included in counts if the head of the organism was still present) with the aid of a variety of microscopes, up to date literature and an extensive laboratory reference collection. Juveniles were recorded separately since they may introduce a seasonal bias in the results, which should be accounted for in later data interpretation. Colonial organisms (e.g. bryozoans) were recorded as present or absent and for the purposes of abundance counts were allocated a numerical value of one.

Wet biomass after blotting to constant weight was recorded to the nearest 0.0001g for each major group.

4.7.2 Abundance Data

AphiaID	Phylum	Taxon	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32	B33
111878	Ciliophora	Folliculinidae sp.								P										P			P		P	P									
558	Porifera	Porifera crust spp.																																	
170417	Porifera	Clionaidae spp.												P	P																				
152196	Cnidaria	Anthoathecata spp.																								P		P							
117994	Cnidaria	Tubularia indivisa																																	
117402	Cnidaria	Calycella syringa												P																					
117103	Cnidaria	Halecium sp.												P																					
117890	Cnidaria	Hydrallmania falcata					P						P	P		P							P										P		
117233	Cnidaria	Sertularella spp.																										P							
117913	Cnidaria	Sertularia cupressina					P	P				P	P	P		P						P				P	P				P	P	P		
117195	Cnidaria	Nemertesia sp.																																	
1606	Cnidaria	Campanulariidae														P																			
117368	Cnidaria	Clytia hemisphaerica														P												P							
283798	Cnidaria	Cerianthus lloydii						2																1									1		
1360	Cnidaria	Actiniaria spp.			3	4	12	9	1					1		1							1	3					1			6		
100665	Cnidaria	Edwardsiidae spp.																						1		1									
152391	Nemertea	Nemertea spp.						4	1				1	3		1							1	3	1	3			1						
1268	Sipunicula	Sipuncula spp. juv.											1																						
136021	Sipuncula	Golfingia spp. juv.										1																							
136050	Sipunicula	Golfingia (Golfingia) vulgaris vulgaris											1																						
136060	Sipunicula	Nephasoma (Nephasoma) minutum																																	
175043	Sipunicula	Phascolion (Phascolion) strombus strombus																																	
130707	Annelida	Pisione remota																																	
939	Annelida	Polynoidae spp. damaged																																	
130749	Annelida	Gattyana cirrhosa											1																						
129491	Annelida	Harmothoe spp.																																	
130777	Annelida	Harmothoe clavigera						1																											
147006	Annelida	Malmgrenia spp.																																	
130815	Annelida	Malmgrenia ljungmani												1																					
152276	Annelida	Malmgrenia arenicolae											3	1										1											
152267	Annelida	Malmgrenia marphysae																																	
130801	Annelida	Lepidonotus squamatus						1					1																						
130601	Annelida	Pholoe inornata												1		1							1												
130599	Annelida	Pholoe baltica							2				1	2		2								1											
131074	Annelida	Sthenelais boa							4																										
130763	Annelida	Phyllodoce longipes												1																					
129445	Annelida	Eulalia sp.																																	
130632	Annelida	Eulalia ornata																																	
129446	Annelida	Eumida sp.											1																						
130644	Annelida	Eumida sanguinea												1	1																				
130116	Annelida	Glycera alba						1					1			1							1	1									1		
130123	Annelida	Glycera lapidum																																	
130126	Annelida	Glycera oxycephala								3	1	2			1										1										
130136	Annelida	Glycinde nordmanni														2																			
130140	Annelida	Goniada maculata																					1	4								1	1		
131100	Annelida	Sphaerodorum gracilis																																	
130195	Annelida	Podarkeopsis capensis			1			1																1							1				
131431	Annelida	Syllis garciai																																	
238263	Annelida	Syllis licheri																																	
131458	Annelida	Syllis variegata																																	
131290	Annelida	Eusyllis blomstrandi						1																											
129679	Annelida	Syllides sp. juv.																																	
131307	Annelida	Exogone verugera																																	
130375	Annelida	Eunereis longissima			1				2							1								1					3				1		

AphiaID	Phylum	Taxon	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32	B33
129370	Annelida	Nephtys sp. juv.																							1		1	4							
130355	Annelida	Nephtys caeca				1							2											1											
130357	Annelida	Nephtys cirrosa	4	1																1					2	2	1								
130359	Annelida	Nephtys hombergii																			2										1			1	1
130364	Annelida	Nephtys longosetosa																																	
130072	Annelida	Marphysa bellii							3				1	2		2																	1		
742232	Annelida	Lysidice unicornis																																	
130240	Annelida	Lumbrineris cf. cingulata	1				2			1			1	2		3							2	1					1						
851788	Annelida	Lumbrineris futilis																																	
130036	Annelida	Parougia caeca														1																			
130041	Annelida	Protodorvillea kefersteini																																	
334722	Annelida	Scoloplos (scoloplos) armiger	1																																
130585	Annelida	Paradoneis lyra										1	1	2	1									2											
130711	Annelida	Poecilochaetus serpens							3				9	6		4																	8		
131106	Annelida	Aonides oxycephala																																	
131107	Annelida	Aonides paucibranchiata																																	
478336	Annelida	Atherospio guillei																																	
131127	Annelida	Laonice bahusiensis																																	
131118	Annelida	Dipolydora flava																																	
131169	Annelida	Pseudopolydora pulchra							2																										
131171	Annelida	Scolelepis bonnieri																																	
131187	Annelida	Spiophanes bombyx	4	1					1					3																					
130266	Annelida	Magelona alleni			1			1																									1		
130269	Annelida	Magelona johnstoni	2	1																															
129240	Annelida	Aphelochaeta sp. Type 1											1																						
129938	Annelida	Aphelochaeta marioni				4	7	2															3	3											
129943	Annelida	Caulleriella alata					1																												
129948	Annelida	Chaetozone zetlandica						2						2		2							1												
129945	Annelida	Tharyx killariensis																					1	1											
130103	Annelida	Flabelligera affinis																															1		
129220	Annelida	Notomastus spp.	1		10	1							1																26					1	
146991	Annelida	Leiochone spp.							3				18	6		3								1		1									
221095	Annelida	Leiochone johnstoni											3	1		2																	3		
559007	Annelida	Leiochone leiopygos							1					1		1																			
130322	Annelida	Praxillella affinis							1				1	8		3																	1		
130491	Annelida	Ophelia borealis								1		2						6		4					2	2									
130512	Annelida	Travisia forbesii																								1									
130980	Annelida	Scalibregma inflatum	1		3	6	1		1				1				2	1	30	1			1	2			5		11		9			1	
146950	Annelida	Galathowenia oculata											1																						
129427	Annelida	Owenia sp.				4	3	9	1				4	7	2	2							2	5									1		
152367	Annelida	Lagis koreni					1	2	4				2	10		1							2	4											
130867	Annelida	Sabellaria spinulosa						1	1			1		1		3		1								5									
129778	Annelida	Ampharete lindstroemi agg.					1	3	1				1	5		1								1											
129717	Annelida	Terebellides sp. damaged																																	
131573	Annelida	Terebellides stroemii																																	
982	Annelida	Terebellidae sp. Juv.					1																												
131495	Annelida	Lanice conchilega												1																			1		
131500	Annelida	Lysilla loveni																						2											
129710	Annelida	Polycirrus spp.								2			3													3							1		
131543	Annelida	Thelepus cincinnatus											2			1																	1		
130967	Annelida	Sabella pavonina																																	
988	Annelida	Spirorbinae juv.																																	
129582	Annelida	Spirobranchus sp. damaged																						1											
560033	Annelida	Spirobranchus lamarcki					9	28	26				25	10	2	54								2									11		

AphiaID	Phylum	Taxon	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32	B33
134568	Chelicerata	Achelia echinata											1															1							
134591	Chelicerata	Nymphon sp.																																	
134723	Chelicerata	Anoplodactylus petiolatus												1		6																			
1082	Crustacea	Cirripedia juv./damaged																																	
1080	Crustacea	Copepoda spp.																																	
1078	Crustacea	Ostracoda sp. Indet																																	
136135	Crustacea	Rissoides desmaresti																																	
120020	Crustacea	Gastrosaccus spinifer																																	
102916	Crustacea	Pontocrates altamarinus	1																																
102466	Crustacea	Leucothoe procera																																	
103226	Crustacea	Urothoe brevicornis		3						1															4										
103228	Crustacea	Urothoe elegans												1		2																			
102972	Crustacea	Harpinia pectinata																					1	3									1		
102495	Crustacea	Acidostoma neglectum																											1						
101661	Crustacea	Tryphosella sp. Indet												1																					
488966	Crustacea	Nototropis swammerdamei																																	
102132	Crustacea	Nototropis vedlomensis																																	
101445	Crustacea	Ampelisca spp. damaged																																	
101896	Crustacea	Ampelisca diadema												2		1																			
101928	Crustacea	Ampelisca spinipes				1		3	4				28	33	3	4								2									1		
103058	Crustacea	Bathyporeia elegans		2																							11	1							
101669	Crustacea	Cheirocratus sp. female																																	1
102831	Crustacea	Maerella tenuimana																																	
102364	Crustacea	Gammaropsis maculata																																	
102367	Crustacea	Gammaropsis nitida																																	
102387	Crustacea	Photis reinhardi														1																			
102036	Crustacea	Leptocheirus hirsutimanus																																	
397383	Crustacea	Crassicorophium crassicorne												1																					
102101	Crustacea	Corophium volutator																		2	13								3	22		1			13
102057	Crustacea	Unciola crenatipalma																																	
103042	Crustacea	Dyopedos monacanthus											3	1		2																			
118995	Crustacea	Gnathia oxyuraea																																	
118401	Crustacea	Eurydice sp. damaged																1																	
130156	Crustacea	Gyge branchialis																																	
118218	Crustacea	Ione thoracica																																	
110483	Crustacea	Diastylis lucifera																						2											
477515	Crustacea	Axius stirhynchus																																	
106800	Crustacea	Callianassidae sp. damaged														1																			
107729	Crustacea	Callianassa subterranea																																	
107739	Crustacea	Upogebia deltaura																																	
107218	Crustacea	Anapagurus laevis																																	
107232	Crustacea	Pagurus bernhardus																					1												
107344	Crustacea	Macropodia parva												1																					
107273	Crustacea	Atelecyclus rotundatus																																	
107278	Crustacea	Pirimela denticulata														1																			
140199	Mollusca	Leptochiton asellus											2		2																				
140201	Mollusca	Leptochiton cancellatus					1	1		1				6		2																			
141799	Mollusca	Gibbula tumida														1																			
151894	Mollusca	Euspira nitida																																	
146905	Mollusca	Epitonium clathrus					1							1																					
149	Mollusca	Buccinidae sp. juv.																																	
138878	Mollusca	Buccinum undatum					2																												
138262	Mollusca	Nucula sp. juv.				3	4	3					2	3	1																				
140588	Mollusca	Nucula hanleyi												2	1																				

AphiaID	Phylum	Taxon	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32	B33
140589	Mollusca	Nucula nitidosa	2	1																							19			1		1			
140590	Mollusca	Nucula nucleus				26	68	31						10		2								2											
211	Mollusca	Mytilidae sp. juv.														4												1							
506025	Mollusca	Gibbomodiola adriatica												1																					
138749	Mollusca	Heteranomia squamula																																	
141883	Mollusca	Diplodonta rotundata																																	
140377	Mollusca	Montacuta substriata																																	
146952	Mollusca	Tellimya ferruginosa																																	
345281	Mollusca	Kurtiella bidentata					1	4	5				8	5		5								21					3				2	1	
138831	Mollusca	Goodallia triangularis								3		1																							
140300	Mollusca	Spisula elliptica																		1															
879714	Mollusca	Asbjornsenia pygmaea																																	
141579	Mollusca	Limecola balthica																																1	1
141433	Mollusca	Abra alba			1	1	1	8	3				20	34		8				1		2	20	32					1		7		3		
141436	Mollusca	Abra prismatica																													2				
141929	Mollusca	Timoclea ovata											1																						
141651	Mollusca	Thracia villosiuscula																																	
104060	Brachiopoda	Gwynia capsula																																	
110993	Bryozoa	Alcyonidium sp.			P																					P								
111653	Bryozoa	Triticella flava																																	
111669	Bryozoa	Vesicularia spinosa										P										P						P			P	P			
111022	Bryozoa	Amathia sp.																				P										P		P	
153579	Bryozoa	Membraniporoidea	P		P	P		P	P	P	P	P								P		P			P	P									
111351	Bryozoa	Conopeum reticulum			P					P								P							P	P									
111355	Bryozoa	Electra pilosa					P	P				P	P	P		P							P			P	P					P			
111320	Bryozoa	Membraniporella nitida								P															P	P								P	
111147	Bryozoa	Bicellariella ciliata																																	
111342	Bryozoa	Puellina venusta																																	
111484	Bryozoa	Escharella immersa				P		P						P	P																				
111496	Bryozoa	Escharella ventricosa																																	
110829	Bryozoa	Schizomavella spp.				P	P		P				P	P	P	P								P									P		
128545	Phoronida	Phoronis spp.						1					2	3		1							2	1									1		
125064	Echinodermata	Amphipholis squamata												1																					
123200	Echinodermata	Ophiuridae sp. juv.																																	
124913	Echinodermata	Ophiura albida						1					10	11	5	27																	2		
124319	Echinodermata	Psammechinus miliaris														2																	1		
124273	Echinodermata	Echinocyamus pusillus							1						3	2										1									
124418	Echinodermata	Spatangus purpureus																																	
124392	Echinodermata	Echinocardium cordatum																																	
103509	Tunicata	Molgula spp.																1								1									
125909	Pisces	Ammodytes sp.																																	

Table 4.9: Macrofauna Abundance Results for Stations B01 to B33

AphiaID	Phylum	Taxon	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60	B61	B62	B63	B64	B65
111878	Ciliophora	Folliculinidae sp.			P		P	P		P	P	P	P	P	P	P	P		P	P	P	P		P	P	P			P	P	P	P		P
558	Porifera	Porifera crust spp.																										P	P					P
170417	Porifera	Clionaidae spp.													P																			P
152196	Cnidaria	Anthoathecata spp.											P				P							P			P			P				
117994	Cnidaria	Tubularia indivisa																								P		P						
117402	Cnidaria	Calycella syringa																																
117103	Cnidaria	Halecium sp.		P																														
117890	Cnidaria	Hydrallmania falcata				P															P													
117233	Cnidaria	Sertularella spp.		P																														
117913	Cnidaria	Sertularia cupressina		P		P																				P			P					
117195	Cnidaria	Nemertesia sp.																								P								
1606	Cnidaria	Campanulariidae																						P										
117368	Cnidaria	Clytia hemisphaerica																																
283798	Cnidaria	Cerianthus lloydii																																
1360	Cnidaria	Actiniaria spp.										67				1				1						1	4				1			
100665	Cnidaria	Edwardsiidae spp.																		1							2							
152391	Nemertea	Nemertea spp.				1	1					5			2				1			3				3	1		2		1			1
1268	Sipunicula	Sipuncula spp. juv.																										1						
136021	Sipuncula	Golfingia spp. juv.			1																													
136050	Sipunicula	Golfingia (Golfingia) vulgaris vulgaris																																
136060	Sipunicula	Nephasoma (Nephasoma) minutum																								1								
175043	Sipunicula	Phascolion (Phascolion) strombus strombus																										1						
130707	Annelida	Pisione remota							1																									
939	Annelida	Polynoidae spp. damaged																									1				1			
130749	Annelida	Gattyana cirrhosa																																
129491	Annelida	Harmothoe spp.																													1			
130777	Annelida	Harmothoe clavigera																																
147006	Annelida	Malmgrenia spp.				2																												
130815	Annelida	Malmgrenia ljungmani				1																												
152276	Annelida	Malmgrenia arenicolae			1														1								2				1			2
152267	Annelida	Malmgrenia marphysae				1																												
130801	Annelida	Lepidonotus squamatus																																
130601	Annelida	Pholoe inornata					1																											
130599	Annelida	Pholoe baltica			1	1						2														1	6	1			3			1
131074	Annelida	Sthenelais boa										2																						
130763	Annelida	Phyllodoce longipes																								1								
129445	Annelida	Eulalia sp.										1																						
130632	Annelida	Eulalia ornata										1																						
129446	Annelida	Eumida sp.																																
130644	Annelida	Eumida sanguinea				1																					1							
130116	Annelida	Glycera alba																			1													
130123	Annelida	Glycera lapidum			2							1												1			2				1			
130126	Annelida	Glycera oxycephala								1					1	1				2	1				1			1			1	1		
130136	Annelida	Glycinde nordmanni				1						4																						
130140	Annelida	Goniada maculata			1																			1			1	1			1	1		1
131100	Annelida	Sphaerodorum gracilis					1																											
130195	Annelida	Podarkeopsis capensis																																
131431	Annelida	Syllis garciai																								2	2	1						
238263	Annelida	Syllis licheri				1																												
131458	Annelida	Syllis variegata										1								1														
131290	Annelida	Eusyllis blomstrandi																																
129679	Annelida	Syllides sp. juv.																						1										
131307	Annelida	Exogone verugera																						1		1						1		
130375	Annelida	Eunereis longissima																																

AphiaID	Phylum	Taxon	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60	B61	B62	B63	B64	B65
129370	Annelida	Nephtys sp. juv.					2																		3					1				
130355	Annelida	Nephtys caeca			1	1	1			1																	1							
130357	Annelida	Nephtys cirrosa						1			1			1	2	3			2	1	1			1	4				1	2				
130359	Annelida	Nephtys hombergii	5																															
130364	Annelida	Nephtys longosetosa																							2									
130072	Annelida	Marphysa bellii			4	2	3					3												4		1		1			4	1		2
742232	Annelida	Lysidice unicornis																													1			1
130240	Annelida	Lumbrineris cf. cingulata				5	1			1		27			1					8	1	2	2	4		10	12	2			4	1	1	6
851788	Annelida	Lumbrineris futilis																												1				
130036	Annelida	Parougia caeca																								1								
130041	Annelida	Protodorvillea kefersteini												1																				
334722	Annelida	Scoloplos (scoloplos) armiger														1									1									
130585	Annelida	Paradoneis lyra			1							4			1									3		3	1							
130711	Annelida	Poecilochaetus serpens			2	1	1					8												4		1					1			
131106	Annelida	Aonides oxycephala																													2			
131107	Annelida	Aonides paucibranchiata				2																				1						1		
478336	Annelida	Atherospio guillei																									1							1
131127	Annelida	Laonice bahusiensis																													1			
131118	Annelida	Dipolydora flava										1																				1		
131169	Annelida	Pseudopolydora pulchra																																
131171	Annelida	Scolelepis bonnieri																							1									
131187	Annelida	Spiophanes bombyx																				2		1		1	1							
130266	Annelida	Magelona alleni																																
130269	Annelida	Magelona johnstoni																																
129240	Annelida	Aphelochaeta sp. Type 1																										1			1			
129938	Annelida	Aphelochaeta marioni																																
129943	Annelida	Caulleriella alata										11														1	1	2			1			
129948	Annelida	Chaetozone zetlandica										1								1														
129945	Annelida	Tharyx killariensis																																
130103	Annelida	Flabelligera affinis																										1						
129220	Annelida	Notomastus spp.										2															2				2			2
146991	Annelida	Leiochone spp.			2	8																				1	1	4						2
221095	Annelida	Leiochone johnstoni			5		1					4			1									4		2						1		
559007	Annelida	Leiochone leiopygos																																
130322	Annelida	Praxillella affinis			4	1																				2								1
130491	Annelida	Ophelia borealis						2					1		2				2	1			2		1									
130512	Annelida	Travisia forbesii																																
130980	Annelida	Scalibregma inflatum																																
146950	Annelida	Galathowenia oculata				1																												
129427	Annelida	Owenia sp.										5														1								
152367	Annelida	Lagis koreni			8	25						1												1		3	5	4						1
130867	Annelida	Sabellaria spinulosa					29					71			7							3				14			1			3		
129778	Annelida	Ampharete lindstroemi agg.			1	1						1															2	1						
129717	Annelida	Terebellides sp. damaged																																1
131573	Annelida	Terebellides stroemii																										2						
982	Annelida	Terebellidae sp. Juv.																																
131495	Annelida	Lanice conchilega				3						2												2		1					1			
131500	Annelida	Lysilla loveni				1																												2
129710	Annelida	Polycirrus spp.			1							2															1				1	1		
131543	Annelida	Thelepus cincinnatus										1																						
130967	Annelida	Sabella pavonina			1																													
988	Annelida	Spirorbinae juv.															2																	
129582	Annelida	Spirobranchus sp. damaged																									1	1						
560033	Annelida	Spirobranchus lamarcki					1					1			1	1										4								

AphiaID	Phylum	Taxon	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60	B61	B62	B63	B64	B65
134568	Chelicerata	Achelia echinata																																
134591	Chelicerata	Nymphon sp.																								1								
134723	Chelicerata	Anoplodactylus petiolatus				2	1																											
1082	Crustacea	Cirripedia juv./damaged																	1							77	1					24		
1080	Crustacea	Copepoda spp.																									1							
1078	Crustacea	Ostracoda sp. Indet																													1			
136135	Crustacea	Rissoides desmaresti										1																						
120020	Crustacea	Gastrosaccus spinifer												1		1	8	1															1	
102916	Crustacea	Pontocrates altamarinus																																
102466	Crustacea	Leucothoe procera																													1			
103226	Crustacea	Urothoe brevicornis						1		1									1				2											
103228	Crustacea	Urothoe elegans			2	4					1	10												1		4	1				1	1		
102972	Crustacea	Harpinia pectinata			1																													
102495	Crustacea	Acidostoma neglectum										1																						
101661	Crustacea	Tryphosella sp. Indet																																
488966	Crustacea	Nototropis swammerdamei																													1			
102132	Crustacea	Nototropis vedlomensis																																1
101445	Crustacea	Ampelisca spp. damaged																																1
101896	Crustacea	Ampelisca diadema																																
101928	Crustacea	Ampelisca spinipes			1	3	1																				4	1						2
103058	Crustacea	Bathyporeia elegans																																
101669	Crustacea	Cheirocratus sp. female																																
102831	Crustacea	Maerella tenuimana																								1					1		1	6
102364	Crustacea	Gammaropsis maculata										1																						
102367	Crustacea	Gammaropsis nitida																								1								
102387	Crustacea	Photis reinhardi																																
102036	Crustacea	Leptocheirus hirsutimanus																																1
397383	Crustacea	Crassicorophium crassicorne																																
102101	Crustacea	Corophium volutator	3																															
102057	Crustacea	Unciola crenatipalma					1					6															1							
103042	Crustacea	Dyopedos monacanthus			1																					1								
118995	Crustacea	Gnathia oxyuraea																														1		
118401	Crustacea	Eurydice sp. damaged																																
130156	Crustacea	Gyge branchialis																																2
118218	Crustacea	Ione thoracica																						2							1			
110483	Crustacea	Diastylis lucifera																																
477515	Crustacea	Axius stirhynchus																									1							
106800	Crustacea	Callianassidae sp. damaged																																
107729	Crustacea	Callianassa subterranea										5												1		1					1			1
107739	Crustacea	Upogebia deltaura										1																						1
107218	Crustacea	Anapagurus laevis								2																								
107232	Crustacea	Pagurus bernhardus																																
107344	Crustacea	Macropodia parva																																
107273	Crustacea	Atelecyclus rotundatus																						1										
107278	Crustacea	Pirimela denticulata																																
140199	Mollusca	Leptochiton asellus			1																						1							1
140201	Mollusca	Leptochiton cancellatus																																
141799	Mollusca	Gibbula tumida																																
151894	Mollusca	Euspira nitida																							1									
146905	Mollusca	Epitonium clathrus																																
149	Mollusca	Buccinidae sp. juv.																								1								
138878	Mollusca	Buccinum undatum																										1						
138262	Mollusca	Nucula sp. juv.			1																													
140588	Mollusca	Nucula hanleyi																									1	2						

AphiaID	Phylum	Taxon	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60	B61	B62	B63	B64	B65
140589	Mollusca	Nucula nitidosa	1																															
140590	Mollusca	Nucula nucleus																																
211	Mollusca	Mytilidae sp. juv.										1															1	2						
506025	Mollusca	Gibbomodiola adriatica																																
138749	Mollusca	Heteranomia squamula																																1
141883	Mollusca	Diplodonta rotundata																						1			1	1						1
140377	Mollusca	Montacuta substriata				2																												
146952	Mollusca	Tellimya ferruginosa																						1										
345281	Mollusca	Kurtiella bidentata			10	22						2												12		3	41	1			2			9
138831	Mollusca	Goodallia triangularis						3					1												1				1	5			1	
140300	Mollusca	Spisula elliptica			1	1	5							2						1					3	1				1	4	1		
879714	Mollusca	Asbjornsenia pygmaea																										1	1					
141579	Mollusca	Limecola balthica																																
141433	Mollusca	Abra alba	1	1	16	19						4				1										1	2	2						
141436	Mollusca	Abra prismatica																																
141929	Mollusca	Timoclea ovata																										1				1		
141651	Mollusca	Thracia villosiuscula																											1	1			1	1
104060	Brachiopoda	Gwynia capsula											10				1													1				
110993	Bryozoa	Alcyonidium sp.													P																			
111653	Bryozoa	Triticella flava																									P							P
111669	Bryozoa	Vesicularia spinosa		P																														
111022	Bryozoa	Amathia sp.		P																														
153579	Bryozoa	Membraniporoidea			P					P				P	P						P				P							P		
111351	Bryozoa	Conopeum reticulum								P						P			P	P	P	P	P		P							P		
111355	Bryozoa	Electra pilosa																								P	P						P	
111320	Bryozoa	Membraniporella nitida						P		P			P	P	P	P	P		P		P	P	P	P	P	P	P		P	P	P	P		P
111147	Bryozoa	Bicellariella ciliata		P																														
111342	Bryozoa	Puellina venusta																															P	
111484	Bryozoa	Escharella immersa											P		P													P						
111496	Bryozoa	Escharella ventricosa															P																	
110829	Bryozoa	Schizomavella spp.			P																						P	P		P				P
128545	Phoronida	Phoronis spp.			1							1															1				44			1
125064	Echinodermata	Amphipholis squamata					1					11															2	1						
123200	Echinodermata	Ophiuridae sp. juv.																				1		1		2	23	3				1		7
124913	Echinodermata	Ophiura albida				4	2								1				3	1	5	17		12	3	25	89	42	1		10	1	1	69
124319	Echinodermata	Psammechinus miliaris																									3	1						
124273	Echinodermata	Echinocyamus pusillus				6	7								3	7	2					1		5	2	31	30	23		2	7	1		47
124418	Echinodermata	Spatangus purpureus				1																												1
124392	Echinodermata	Echinocardium cordatum																			1			1								1		
103509	Tunicata	Molgula spp.																	1															
125909	Pisces	Ammodytes sp.																											1					

Table 4.10: Macrofauna Abundance Results for Stations B34 to B65

4.7.3 Biomass Data

Station	Polychaeta [g/m²]	Crustacea [g/m²]	Mollusca [g/m²]	Echinodermata [g/m²]	Others [g/m²]	Fish [g/m²]
B01	0.2558	0.0015	0.1334			
B02	0.0242	0.0188	0.0443			
B03	0.4774		0.0005			
B04	0.1663	0.0114	1.5510			
B05	0.3419		12.4668			
B06	1.2545	0.0645	4.8847	0.0112	1.6090	
B07	1.4545	0.0753	0.1197	0.0191	0.0001	
B08	0.3483	0.0010	0.0164			
B09	0.0021					
B10	0.3273		0.0025		0.0013	
B11	2.0189	0.3821	0.9426	0.6054	0.2445	
B12	1.2479	0.7804	3.1343	0.5860	0.0558	
B13	0.1433	0.0195	0.2909	0.3179		
B14	0.7222	1.1484	0.8078	3.7439	0.0303	
B15	0.0015					
B16	1.2126	0.0010				
B17	0.0578					
B18	0.4602	0.0086	1.1909			
B19	0.0277	0.0564				
B20			0.0297			
B21	0.4702	0.0193	0.4999		0.1431	
B22	1.5084	0.0236	0.6567		0.4734	
B23	0.5519	0.0108			0.0216	
B24	0.1114			0.0091	0.0770	
B25	0.0128	0.0093	0.6906			
B26	0.0190	0.0006	0.0001		0.0001	
B27	1.6795	0.0115	0.0180		0.0019	
B28		0.0882	0.0223			
B29	0.1962		0.0416			
B30	0.0440	0.0030	0.0025			
B31	0.4870	0.0257	0.0722	0.6540	0.0167	
B32	0.3725		0.0093			
B33	0.0334	0.0748	0.2623			
B34	0.6084	0.0156	0.0036			
B35			0.0022			
B36	1.9195	0.0343	0.7506		0.0164	
B37	6.0310	0.0841	1.0085	31.5675	0.0026	
B38	0.4918	0.0638	3.5615	0.1139	0.0034	
B39	0.1291	0.0023	0.0060			
B40	0.0004					
B41	0.3588	0.0509				
B42	0.0036	0.0006				
B43	2.0126	3.2265	0.0250	0.0126	0.0329	
B44	0.0064		0.0022			
B45	0.0084	0.0230	0.0021		0.0006	
B46	0.2345			0.0516	0.0081	
B47	0.1497	0.0035	0.0009	0.1350		
B48	0.0002	0.2750		0.0285		

Station	Polychaeta [g/m²]	Crustacea [g/m²]	Mollusca [g/m²]	Echinodermata [g/m²]	Others [g/m²]	Fish [g/m²]
B49		0.0395				
B50	0.1700	0.0052		0.0348	0.0385	
B51	0.1208		0.0205	0.0062	0.0268	
B52	0.0685		0.5550	8.3980		
B53	0.0178			0.9002	0.0025	
B54	0.3594	0.0065				
B55	8.5543	1.4221	0.0335	1.5876		
B56	0.2490		26.3540	0.1589		
B57	1.2197	0.5509	0.9466	1.1761	0.0138	
B58	2.3743	0.1556	0.3258	3.1416	0.1026	
B59	1.2266	0.0109	2.2982	0.7102	0.0761	
B60	0.0070		0.0123	0.0044	0.1196	0.2110
B61	0.4237		0.0242	0.0261		
B62	1.1609	0.1136	0.1591	0.6504	0.1772	
B63	0.1389	0.0008	0.0735	4.4059		
B64	0.0012	0.0561	0.0032	0.0007		
B65	3.1313	0.5045	0.0208	6.1287	0.0701	

Table 4.11: Macrofauna Biomass Results

5. Bibliography

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Report Revisions

Revision Number	Date of Issue	Comments
00	August	Factual Data Report
01	August	Revised Data Report based on Client comments

Appendix 1 Deck Log Observations

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
1	B04	DG	21	23:52	02/05/2018	<20	N/S	N/S	Poor sample, switch from DG to HG. Sample discarded	Dark brown	Silty, sandy gravel with some pebbles	N/A	412046.05	5787965.82
2	B04	HG	21	00:17	03/05/2018	70	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown	Silty, sandy gravel with some pebbles	Oweniidae, serpulid tubes	412047.51	5787968.08
3	B05	HG	21	00:58	03/05/2018	65	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown	Silty, sandy gravel with some pebbles	Oweniidae, anemones, whelk, hydroids, serpulid tubes	413203.03	5788692.14
4	B06	HG	23	01:27	03/05/2018	75	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown	Silty, sandy gravel with some pebbles	Pectinidae, Oweniidae, Nemertea, oyster shell (empty)	414370.02	5789421.62
5	B07	HG	22	01:57	03/05/2018	70	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown	Silty, sandy gravel with some pebbles, v.v. minor Sabellaria debris	Oweniidae, serpulid tubes	415527.93	5790144.66
6	B08	HG	24	02:32	03/05/2018	70	FA	1 x 3L	1 x PSA, 1 x TOC	Light brown	Silty, gravelly sand with some pebbles, very minor Sabellaria debris	Serpulid tubes, very minor Sabellaria debris, shell fragments	416685.52	5790865.55
7	C02	HG	22	03:16	03/05/2018	80	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Dark brown	Silty, sandy gravel with some pebbles	N/A	415056.84	5790240.48

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
8	B09	HG	24	03:58	03/05/2018	50	FA	1 x 1L	1 x PSA, 1 x TOC	Dark brown	Silty, gravelly sand with some pebbles	Serpulid tubes	417845.39	5791594.68
9	B10	HG	25	04:27	03/05/2018	100	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown, black anoxic layer at bottom of sample	Silty, gravelly sand with some pebbles, Black anoxic clayey material at bottom of sample	Hydrozoa	419009.9	5792316.54
10	C03	HG	27	04:56	03/05/2018	90	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Dark brown	Silty, sandy gravel with some pebbles	N/A	420071.29	5792959.03
11	B11	HG	27	05:18	03/05/2018	90	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown	Silty, gravelly sand with some pebbles and significant shell debris	Nephtys, amphipod, hydroids, ophiuroids, Oweniidae	420167.52	5793046.97
12	B12	HG	29	05:47	03/05/2018	90	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown	Silty, gravelly sand with some pebbles and significant shell debris	Amphipod, polychaetes, ophiuroid, crab, Pectinidae, Oweniidae	421326.71	5793769.26
13	B13	HG	29	06:18	03/05/2018	90	FA	1 x 5L, 1 x 1L	1 x PSA, 1 x TOC	Dark brown	Silty, gravelly sand with some pebbles and significant shell debris	Oweniidae, serpulid tubes, ophiuroid, chiton, amphipod	422485.57	5794491.74
14	B14	HG	28	06:48	03/05/2018	70	FA	1 x 5L	1 x PSA, 1 x TOC	Dark brown	Silty, gravelly sand with some pebbles	echinoid, ophiuroid, Oweniidae, hydroids, crab	423642.56	5795217.20

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
15	C07	HG	27	07:33	03/05/2018	70	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Light brown	Silty gravelly sand with shell and some pebbles	N/A	427077.96	5797066.70
16	C08	HG	39	08:34	03/05/2018	90	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Light brown	Silty sand with shell fragments	N/A	436284.56	5797820.16
17	C13	HG	39	09:37	03/05/2018	90	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Silty gravelly sand with shell	N/A	443760.93	5797768.54
18	C16	HG	50	11:00	03/05/2018	90	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Silty gravelly sand with shell	N/A	453105.88	5800544.99
19	C14	HG	47	12:12	03/05/2018	75	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Gravelly sand with shell	MBES line completed. Vessel in way of location, waited for it to pass.	453709.48	5806546.64
20	C15	HG	47	13:53	03/05/2018	85	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Light brown marbled with dark brown	Slightly shelly medium sand (light brown), marbled with dark brown silty sand	MBES Line completed	469063.3	5807222.17
21	C17	HG	40	15:10	03/05/2018	100	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Coarse sand with occasional fine gravel and small shell fragments	MBES Line completed	463925.88	5799170.72

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
22	C12	HG	37	17:07	03/05/2018	97	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Gravelly muddy coarse sand	MBES Line completed, ophiuroid	443853.13	5791179.76
23	C10	HG	37	18:26	03/05/2018	60	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Muddy sandy gravel	MBES line completed, Hart urchin tests	446218.3	5780861.90
24	C11	HG	48	19:43	03/05/2018	85	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Coarse sand with occasional shell fragments	MBES Line completed	451259.06	5769883.02
25	C09	HG	36	20:49	03/05/2018	90	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Coarse sand with occasional shell fragments	MBES Line completed	442600.84	5768951.79
26	B65	HG	39	21:50	03/05/2018	75	FA	2 x bag, 1 x 5l bucket	1 x PSA, 1 x TOC	Medium Brown	Muddy sandy gravel	Mantis shrimp, hart urchin	439875.07	5779553.88
27	C06	HG	38	22:24	03/05/2018	75	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Muddy sandy gravel		439218.71	5780009.23
28	B63	HG	37.5	22:44	03/05/2018	45	N/S	N/S	N/S	N/S	N/S	Cobble in the jaws	439145.94	5780711.98
29	B63	HG	37.7	22:52	03/05/2018	65	FA	2 x bag, 1 x 3l bucket	1 x PSA, 1 x TOC	Medium Brown	Gravelly sand		439145.11	5780708.32
30	B64	HG	47	00:00	04/05/2018	90	FA	1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Medium/coarse sand, with shell fragments	No visible fauna	440305.39	5781434.20
31	B62	HG	49	00:28	04/05/2018	80	FA	2 x 5L	1 x PSA, 1 x TOC	Dark Brown	Silty, gravelly sand with shell fragments	Ophiuroids, polychaetes, minor relic Sabellaria debris, some small concretions	440740.18	5783319.80

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
32	B58	HG	50	01:00	04/05/2018	80	FA	1 x 5L	1 x PSA, 1 x TOC	Dark Brown	Silty, gravelly sand with shell fragments	Ophiuroids, urchins, pectinidae tubes	440019.22	5784481.97
33	C05	HG	49	01:29	04/05/2018	80	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Dark Brown	Silty, gravelly sand with shell fragments	N/A	439901.29	5784477.57
34	B57	HG	41	01:59	04/05/2018	80	FA	1 x 5L	1 x PSA, 1 x TOC	Dark Brown	Silty gravelly sand with shell debris, one small cobble with epifauna	Mud shrimp, Pectinidae tubes, ophiuroids, minor Sabellaria debris, some small concretions	438860.52	5783766.58
35	B61	HG	47	02:27	04/05/2018	100	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Silty sand with significant shell debris	polychaetes	439588.77	5782601.34
36	B60	HG	41	02:55	04/05/2018	100	FA	1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Silty sand with significant shell debris	Sand eel	438427.62	5781879.27
37	B59	HG	40	03:23	04/05/2018	80	FA	1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Silty gravelly sand with shell fragments	Urchin, Pectinidae tubes, ophiuroid, whelk, very minor Sabellaria debris	437270.27	5781155.37
38	B55	HG	41	03:55	04/05/2018	80	FA	1 x 5L, 1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Silty gravelly sand with shell fragments, H2S smell	Heart urchin, Lanice, Sipuncula, crab, ophiuroids, Sabellaria debris, some concretions	436545	5782316.09
39	B56	HG	43	04:28	04/05/2018	80	FA	1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Silty gravelly sand with shell fragments	No visible fauna	437704.79	5783043.00
40	B54	HG	38	04:56	04/05/2018	60	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Silty sand with shell and gravel	polychaetes	436979.9	5784204.50
41	B53	HG	42	05:20	04/05/2018	60	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Silty sand with shell and gravel	Ophiuroids, Pectinidae tubes, bryozoans	435818.58	5783476.35

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
42	B52	HG	39	05:45	04/05/2018	80	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown, anoxic grey	Silty sand with shell and gravel, anoxic clayey sediments at base of sample	Heart urchin, ophiuroids, minor Sabellaria debris	434660.83	5782747.41
43	B51	HG	40	06:12	04/05/2018	90	FA	1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Silty sand with significant shell debris	Pectinidae tubes	433499.44	5782023.93
44	B50	HG	37	06:39	04/05/2018	90	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Silty sand with significant shell debris	Ophiuroids, polychaetes, minor Sabellaria debris	432340.57	5781299.62
45	B49	HG	33	07:17	04/05/2018	100	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Medium/coarse sand, with significant shell fragments	No visible fauna	430454.61	5781732.21
46	B48	HG	34	07:46	04/05/2018	100	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Medium/coarse sand, with significant shell fragments	No visible fauna	429296.77	5781009.10
47	B47	HG	42	08:12	04/05/2018	90	FA	1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Medium/coarse sand, with significant shell fragments	No visible fauna	428137.93	5780284.31
48	B46	HG	39	08:41	04/05/2018	60	FA	1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Medium/coarse sand, with some shell fragments	polychaetes, serpulid tubes	426971.8	5779554.86
49	C18	HG	33	09:06	04/05/2018	90	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Dark Brown	Silty sand, with sabellaria debris and concretions	N/A	427159.03	5780519.73
50	B45	HG	35	09:32	04/05/2018	95	FA	1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Medium/coarse sand, with significant shell fragments	No visible fauna	427408.39	5781441.38
51	B44	HG	33	10:02	04/05/2018	100	FA	1 x 1L	1 x PSA, 1 x TOC	Medium Brown	Medium/coarse sand, with some shell fragments	very minor Sabellaria debris, no visible fauna	426248.39	5780713.08

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
52	B43	HG	35	10:32	04/05/2018	90	FA	1 x 5L	1 x PSA, 1 x TOC	Dark Brown	Silty gravelly sand with shell debris	Sabellaria debris and concretions, some ~5cm. Anemones, mud shrimp	425521.04	5781872.33
53	B42	HG	33	11:01	04/05/2018	100	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Medium sand with shell fragments	N/A	424362.09	5781146.37
54	B41	HG	30	11:35	04/05/2018	80	FA	2 bags, 1 x 5L	1 x PSA, 1 x TOC	Dark Brown	Silty gravelly sand with shell debris	Sabellaria debris and concretions, some ~5cm.	423638.5	5782306.12
55	B40	HG	30	12:03	04/05/2018	100	FA	2 bags, 2 x 5L	1 x PSA, 1 x TOC	Medium Brown	Coarse sand with shell fragments		422914.45	5783468.78
56	B39	HG	26	12:29	04/05/2018	95	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Fine - coarse sand with shell fragments	Polychaete	422190.41	5784630.43
57	B38	HG	29	13:01	04/05/2018	80	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Gravelly fine sand	N/A	421467.15	5785789.36
58	C04	HG	29	13:19	04/05/2018	90	PC	2 x jars, 4 x bags	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Medium Brown	Medium to coarse sand and gravel		421392.97	5786222.78
59	B37	HG	29	13:44	04/05/2018	70	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Shelly fine sand	Polychaetes, urchin, sand mason worm	420744.08	5786955.09
60	B36	HG	27	14:07	04/05/2018	70	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Silty gravelly sand with shell debris	Urchin	420015.72	5788112.44
61	B31	HG	22	14:52	04/05/2018	70	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Medium Brown	Silty gravelly sand with shell debris	Ophiuroid, *Psamicinus Milliabris*, hydroid	419296.87	5789275.17
62	B24	HG	19	15:22	04/05/2018	70	FA	2 bags, 1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Silty gravelly sand with shell debris	Sabellaria debris and concretions <5cm	417411.35	5789708.53
63	B23	HG	19	15:45	04/05/2018	100	FA	2 bags, 1 x 5L	1 x PSA, 1 x TOC	Medium Brown	Shelly fine sand		416253.77	5788984.36

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
64	B22	HG	19	16:18	04/05/2018	70	FA	2 bags, 1 x 5L & 1 X 3L	1 x PSA, 1 x TOC	Olive grey / brown	Muddy gravelly sand	Sand mason worm, polychaete	413932.63	5787532.63
65	B21	HG	19	16:44	04/05/2018	70	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Olive grey / brown	Muddy gravelly sand	Sand mason worm, hydroid, Sabellaria debris	412772.56	5786813.16
66	B20	HG	16.5	17:38	04/05/2018	100	FA	2 bags, 1 x 1L	1 x PSA, 1 x TOC	Dark grey	Slightly sandy silt	*Abra* sp. polychaetes	411612.97	5786085.49
67	B19	HG	12	18:08	04/05/2018	100	FA	2 bags, 1 x 1L	1 x PSA, 1 x TOC	Dark grey	Slightly sandy silt, shallow anoxic layer	n/a	410453.42	5785360.41
68	B18	HG	11.5	18:27	04/05/2018	95	FA	2 bags, 1 x 1L	1 x PSA, 1 x TOC	Medium brown	Coarse shelly sand	n/a	409292.8	5784633.11
69	C19	HG	12	18:53	04/05/2018	98	PC	4 bags, 2 jars	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Dark Brown	Coarse shelly sand with clay globules	n/a	408858.91	5782746.22
70	B27	HG	12	19:10	04/05/2018	98	FA	2 bags, 1 x 3L	1 x PSA, 1 x TOC	Dark Brown	Coarse shelly sand with clay globules	Polychaetes	408859.4	5782748.80
71	B26	HG	8	19:39	04/05/2018	90	FA	2 bags, 1 x 1L	1x PSA, 1 x TOC	Medium brown	Fine sand with occasional shell fragments		407695.18	5782023.73
72	B32	HG	14	20:06	04/05/2018	80	FA	2 bags, 1 x 1L	1 x PSA, 1 x TOC	Dark grey and medium brown	Dark grey clay with fine sand and occasional shell. Anoxic	Polychaetes	408426.46	5780859.75
73	B33	HG	15	20:36	04/05/2018	100	FA	2 bags, 1 x 1L	1x PSA, 1 x TOC	Dark grey and medium brown	Dark grey clay with fine sand and occasional shell. Anoxic	Impoverished	409582.26	5781591.12
74	B28	HG	14.5	21:03	04/05/2018	100	N/S					Grab door open on recovery	410016.59	5783472.26

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
75	B28	HG	14.5	21:09	04/05/2018	100	FA	2 bags, 1 x 1L	1x PSA, 1 x TOC	Dark grey and medium brown	Dark grey clay with fine sand and occasional shell. Anoxic	Amphipods, Impoverished	410017.52	5783471.92
76	B29	HG	16	21:41	04/05/2018	97	FA	2 bags, 1 x 1L	1x PSA, 1 x TOC	Olive grey / brown	Soft silt	Polychaetes/ Nemertea	411175.8	5784195.07
77	B34	HG	17	22:14	04/05/2018	98	FA	2 bags, 1 x 1L	1x PSA, 1 x TOC	Dark grey/light brown	Cohesive Clay	N/A	410738.4	5782308.46
78	B35	HG	22	22:45	04/05/2018	98	FA	2 bags, 1 x 1L	1x PSA, 1 x TOC	Olive grey / brown	Soft silt	Bryozoan	411898.11	5783033.37
79	C01	HG	24	23:20	04/05/2018	95	PC	4 bags, 2 jars	2 x HC, 1 x HM, 1 x TOC, 1 x PSA, 1 x Spare	Olive grey / brown	Soft silt	N/A	411716.96	5784601.01
80	B30	HG	27	23:46	04/05/2018	95	FA	2 bags, 1 x 1L	1x PSA, 1 x TOC	Olive grey / brown	Soft silt	Polychaetes	412334.520	5784913.47
81	B03	HG	20	00:24	05/05/2018	60	FA	1 x 3L	1x PSA, 1 x TOC	Medium brown with black layer at base	Gravelly fine silt with deeper anoxic layer of black clay	polychaetes, Bryozoa	410886.080	5787237.96
Mobilised MV Lia, to acquire additional 6 Stations														
82	B_01	HG	6.5	10:28	16/05/2018	55	FA	1 x 1L	1x PSA, 1 x TOC	Medium Brown	Fine sand with occasional shell fragments	Polychaetes. Fix not initially taken	406247.47	5784336.97
83	B_16	HG	8.5	10:57	16/05/2018	80	FA	1 x 3L	1x PSA, 1 x TOC	Medium Brown	Coarse and fine sand with occasional shell fragments.	Polychaetes	406947.22	5783240.46

Cast#	Station	Sampler Used	Water Depth (m)	Time	Date	Volume Recovered (%)	Sample Name	Container Type and Quantity	Comments	Sediment Description		Conspicuous Fauna/ Comments	Easting	Northing
										Colour	Sediment Description/ Stratification			
84	B_15	HG	4.3	11:26	16/05/2018		n/s					No sample, weather increased, bad deployment and recovery. Down on weather.	406359.61	5782364.36
85	B_02	HG	5.6	08:14	19/05/2018		n/s					No sample	407402.48	5785079.38
86	B_02	HG	5.6	08:34	19/05/2018	60	FA	1 x 1L	1x PSA, 1 x TOC	Medium Brown	Fine sand	Nephthys, Nuculidae	407409.81	5785066.79
87	B_17	HG	8.7	09:01	19/05/2018	70	FA	1 x 1L	1x PSA, 1 x TOC	Medium Brown	Coarse sand with occasional shell fragments		408136.49	5783899
88	B_25	HG	9.1	09:31	19/05/2018	50	FA	1 x 1L	1x PSA, 1 x TOC	Medium Brown	Fine sand		406542.76	5781302.68
89	B_15	HG	4.1	10:00	19/05/2018	50	FA	1 x 1L	1x PSA, 1 x TOC	Medium Brown	Fine sand with occasional shell fragments		406368.87	5782338.01