

Project Title/ Location	MeyGen Tidal Energy Project, Phase 1a. Inner Sound.
Date:	08/03/2016

MeyGen Tidal Energy Project Phase 1a

Ecological Clerk of Works Report #2 – Cable Installation



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1 INTRODUCTION

The MeyGen Tidal Energy Project Phase 1 (“the Development”) received consent under Section 36 of the Electricity Act 1989 from the Scottish Ministers on 9th October 2013 (“the S.36 Consent”). The Ecological Clerk of Works (ECow) is appointed under S.36 Consent Condition 10 and Marine Licence Condition 3.2.1.5.

Phase 1a of the Development includes the installation of:

- 4 x Turbine Subsea Cables (TSC);
- 4 x Turbine Support Structures (TSS); and
- 4 x Tidal Turbine Generators (TTG).

This document summarises the activities on site from 10th September 2015 – 5th November 2015, including the TSC installation works.

2 SUMMARY OF INNER SOUND SITE WORKS

	Date	Operation	Summary
14	10/09/2015	HDD bore preparation for TSC installation	Stabilised HDD exits with rock / cement bag.
15	11/09/2015	HDD bore preparation for TSC installation	Stabilised HDD exits with rock / cement bag.
16	12/09/2015	HDD bore preparation for TSC installation	No activity – inclement weather.
17	13/09/2015	HDD bore preparation for TSC installation	Preparing and fitting HDD bellmouths.
18	14/09/2015	HDD bore preparation for TSC installation	No activity.
19	15/09/2015	HDD bore preparation for TSC installation	Fitting HDD bellmouths.
20	16/09/2015	HDD bore preparation for TSC installation	Installed messenger wire through HDD ducts.
21	17/09/2015	HDD bore preparation for TSC installation	Installed messenger wire through HDD ducts.
22	18/09/2015	HDD bore preparation for TSC installation	Installed messenger wire through HDD ducts.
23	19/09/2015	HDD bore preparation for TSC installation and installation of Datafish	Installed pick up buoys to messenger wires / installed datafish buoy.
24	20/09/2015	Siem Daya 1 mobilisation	Siem Daya 1 mobilised from Hartlepool to site.
25	21/09/2015	Siem Daya 1 DP trials / TSC installation	DP trials completed/ TSC 4 commenced
26	22/09/2015	TSC installation	TSC 4 completed / TSC 3 completed.
27	23/09/2015	TSC installation	TSC 2 completed / TSC 1 commenced.
28	24/09/2015	TSC installation and Siem Daya demobilisation	Siem Daya demobilised from site to Hartlepool.
29	25/09/2015	Transponder recovery	Siem Daya 1 transponder recovered from seabed.
30	04-07/10/2015	Post-lay TSC ROV video survey	ROV post lay survey completed.
31	08/10/2015	FLOWBEC installation	FLOWBEC installation completed.
32	05/11/2015	FLOWBEC installation	FLOWBEC recovery completed.

James Fisher Marine Services Ltd. (JFMS) took over control of the Inner Sound site as Principal Contractor (PC) for the MeyGen Tidal Energy Project Phase 1a. As Principal Contractor, JFMS oversaw all works on site and issued 'permits to work' for any operation conducted in relation to the project.

Any operation not related to the Section 36 consent (dated 09/10/13) or Marine Licences

(04577/14/0 & 05647/15/0)¹ is still required to adhere to the site rules and conduct operations in line with the Environmental Management Plan (EMP) (RHK-1A-40-HSE-002-F-EMPConstructionWorks). During the period 10th September to 5th November 2015 there have been no unrelated operations in the Inner Sound.

Notable operations have been discussed further below.

2.1 HDD Preparation for TSC Installation

Osiris were contracted by JFMS to complete the preparation of the HDD exits for the TSC installation. The works involved divers stabilising each HDD exit with rock and cement bags, removing the end cap and installing a bellmouth (to assist the TSC entry into the duct), messenger wire and pick-up buoys.

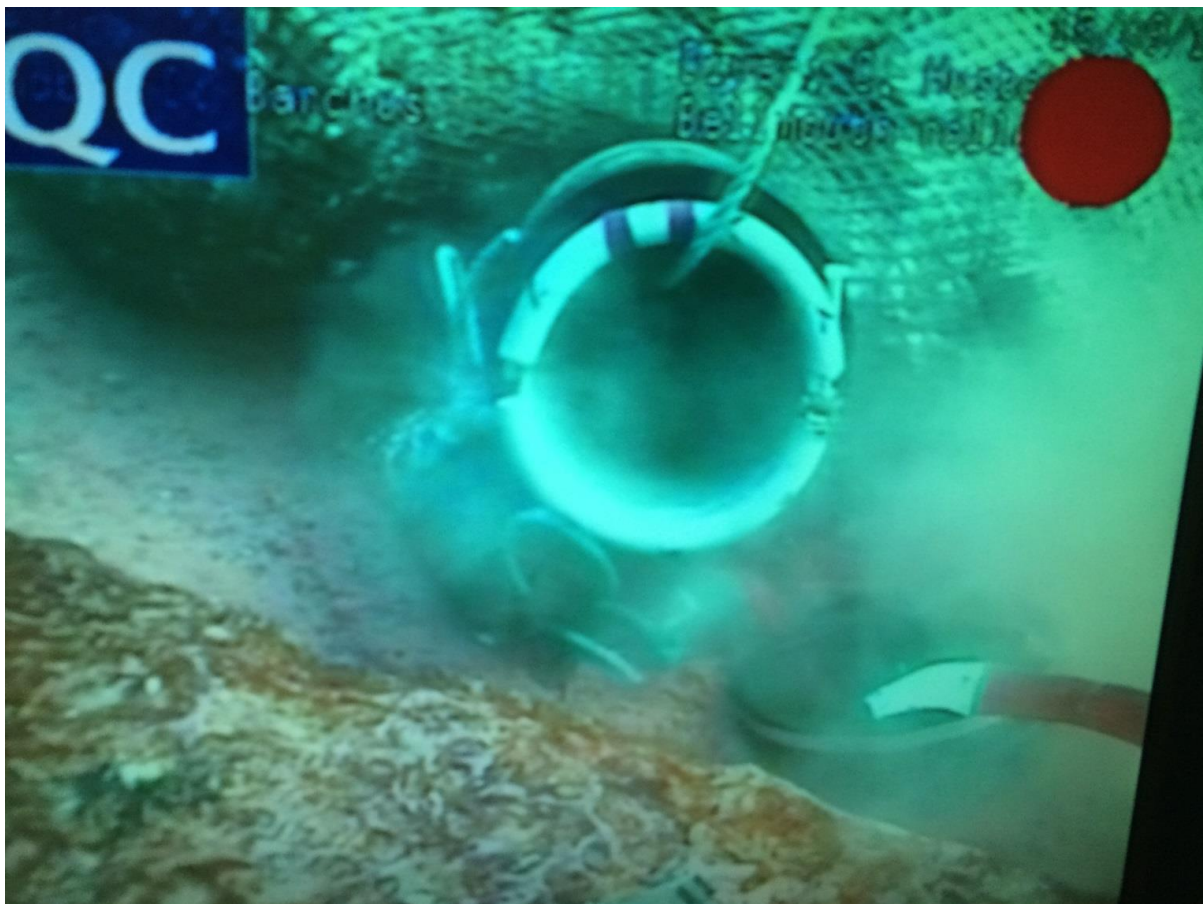


Figure 1 HDD2 exit with rockbag stabilisation and bellmouth installed

¹ Operations require their own consent / or operation exempt from licensing



Figure 2 Pick-up buoys attached to messenger wires

2.2 TSC Installation

4 x TSCs were installed by the JFMS using the Siem Daya 1 DP vessel between 20th and 24th September 2015.

Operations involved:

1. Recovery of the pick-up buoy and messenger wire to Siem Daya 1 deck;
2. Pulling messenger wire and winch wire from onshore through HDD duct to Siem Daya 1;
3. Connecting the TSC to winch wire and overboard TSC pulling head (winching from onshore);
4. Maintaining a ROV on station to view the TSC pulling head entry into HDD duct;
5. TSC pulling head reaches stop point onshore and secured;
6. Siem Daya 1 moves off laying TSC from HDD duct to TTG position; and
7. Overboard TSC connector with clump weight; with ROV on station to view touchdown.

The multicat (C-Chariot) vessel with a dive crew remained on standby during the installation in case required.



Figure 3 Siem Daya 1 and onshore site



Figure 4 TSC overboarded on Siem Daya 1



Figure 5 TSC pulling head reaches stop point onshore



Figure 6 TSC connector prepared for installation (clump weight behind)

2.3 Deployment and Recovery of FLOWBEC

A successful field trial using the FLOWBEC² platform was completed between 8th October and 5th November 2015.

Installation was completed using the Green Isle multicat (Green Marine (UK) Ltd.) on a 3-point mooring. Moorings had to be designed and accurately installed and removed to prevent damaging 2 x TSCs in the area. The installation used hydraulic release shackles and a dropdown camera to monitor positioning and touchdown. Recovery was completed from the C-Chariot (Leask Marine) without moorings and using an ROV hook-up.

3 COMMUNICATION OF ENVIRONMENTAL REQUIREMENTS

The environmental tool box talk on the Siem Daya 1 was conducted by JFMS at Hartlepool during mobilisation. The presentation used can be found in Appendix A.

Tool box talks completed by JFMS on the C-Chariot were witnessed by the ECoW and included all environmental responsibilities for the project and the site.

4 SIEM DAYA 1 AUDIT

An environmental audit of the Siem Daya 1 was carried out during mobilisation at Hartlepool (on the 16/09/2015). During the audit the vessel emergency procedures, documentation and pollution kits were examined (Appendix B).

4.1 Marine Pollution Emergency Plan

The Shipboard Marine Pollution Emergency Plan (SMPEP) was reviewed, and was currently in date. The SMPEP was most recently approved by a 3rd party (Det Norske Veritas) on 19/02/2014.

The SMPEP meets the requirements of the Marine Pollution Contingency Plan (Section 6 of RHL-1A-40-HSE-F-002-EMPCConstructionWorks) and the Construction Phase Emergency Response Cooperation Plan (FSH-1A-40-HSE-013-F-ConstructionPhaseEmergencyResponseCooperationPlan), with the exception of the UK emergency contact details in SMPEP which were updated accordingly.

4.2 Emergency Drills

SMPEP exercises are conducted every 3 months on the Siem Daya 1. The last two drills were conducted on 24th May 2015 and 19th August 2015. Both drills were concluded as satisfactory and no actions were required.

² <http://noc.ac.uk/project/flowbec>

4.3 Ballast Water Management Plan and Record Book

The Siem Daya 1 Ballast Water Management Plan was in line with International Convention for the Control and Management of Ships' Ballast Water and Sediments.

4.4 Garbage Record Books

The Garbage Record book was up to date from previous operations with receipt records for transfers to licenced shore-side contractors.

5 TRANSPORT AUDIT SHEETS

Transport Audit Sheets were submitted for all operations. Details of materials taken offshore have been logged. Nil returns have been included in the reports. The Transport Audit Sheets are included in Appendix C.

	Operation	Date	Transport	Document Number
14	HDD prep - rock bags/cement	10/09/2015	25 x 25kg cement bags; 4 x 4t rock bags	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 14
15	HDD prep - rock bags/cement	11/09/2015	17 x 25kg cement bags; 3 x 4t rock bags	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 15
16	No activity - weather	12/09/2015	Nil	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 16
17	HDD prep - prepare bellmouths	13/09/2015	4 x bell mouths	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 17
18	No activity	14/09/2015	Nil	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 18
19	HDD prep - fit bellmouths	15/09/2015	4 x bell mouths	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 19
20	HDD prep - install messenger wire	16/09/2015	4 x 8mm messenger wires	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 20
21	HDD prep - install messenger wire	17/09/2015	1 x 8mm messenger wires	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 21
22	HDD prep - install messenger wire	18/09/2015	4 x 10mm messenger wires;	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 22
23	HDD prep - install pick up bouys / install datafish	19/09/2015	4 x ground line, risers and buoy; datafish	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 23
24	No activity on site. Siem Daya mobilised from Hartlepool	20/09/2015	4 x TSC / Transponder	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 24

25	DP trials / TSC 4 commences	21/09/2015	4 x TSC / Transponder	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 25
26	TSC 4 complete / TSC 3 completed	22/09/2015	4 x TSC	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 26
27	TSC 2 completed / TSC 1 started	23/09/2015	2 x TSC	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 27
29	Transponder pick up	25/09/2015	Nil	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 28
31	FLOWBEC installation	08/10/2015	FLOWBEC	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 29
32	FLOWBEC recovery	05/11/2015	FLOWBEC	MEY-1A-40-HSE-004-D-TransportAuditSheetReport 30

6 DEPOSIT AUDIT SHEETS

Deposit Audit Sheets were submitted where materials were either deposited (permanent or temporary) or recovered from the seabed.

The Deposit Audit Sheets are included in Appendix D.

	Operation	Date	Deposit	DOCUMENT
14	HDD prep - rock bags/cement	10/09/2015	8 x cement bags; 1 x 4t rock bags	MEY-1A-70-HSE-005-D-DepositAuditSheet 7
15	HDD prep - rock bags/cement	11/09/2015	7 x cement bags; 3 x 4t rock bags	MEY-1A-70-HSE-005-D-DepositAuditSheet 8
16	No activity - weather	12/09/2015	Nil	MEY-1A-70-HSE-005-D-DepositAuditSheet 9
17	HDD prep - prepare bellmouths	13/09/2015	Nil	MEY-1A-70-HSE-005-D-DepositAuditSheet 10
18	No activity	14/09/2015	Nil	MEY-1A-70-HSE-005-D-DepositAuditSheet 11
19	HDD prep - fit bellmouths	15/09/2015	4 x bell mouths	MEY-1A-70-HSE-005-D-DepositAuditSheet 12
20	HDD prep - install messenger wire	16/09/2015	3 x 8mm messenger wires	MEY-1A-70-HSE-005-D-DepositAuditSheet 13
21	HDD prep - install messenger wire	17/09/2015	1 x 8mm messenger wires	MEY-1A-70-HSE-005-D-DepositAuditSheet 14
22	HDD prep - install messenger wire	18/09/2015	4 x 10mm messenger wires;	MEY-1A-70-HSE-005-D-DepositAuditSheet 15
23	HDD prep - install pick up bouys / install datafish	19/09/2015	4 x ground line, risers and buoy; datafish	MEY-1A-70-HSE-005-D-DepositAuditSheet 16
24	No activity on site. Siem Daya mobilised from Hartlepool	20/09/2015	Nil	MEY-1A-70-HSE-005-D-DepositAuditSheet 17

25	DP trials / TSC 4 commences	21/09/2015	Transponder	MEY-1A-70-HSE-005-D-DepositAuditSheet 18
26	TSC 4 complete / TSC 3 completed	22/09/2015	2 x TSC	MEY-1A-70-HSE-005-D-DepositAuditSheet 19
27	TSC 2 completed / TSC 1 started	23/09/2015	2 x TSC	MEY-1A-70-HSE-005-D-DepositAuditSheet 20
29	Transponder pick up	25/09/2015	Transponder recovered from seabed	MEY-1A-70-HSE-005-D-DepositAuditSheet 21
31	FLOWBEC installation	08/10/2015	FLOWBEC	MEY-1A-70-HSE-005-D-DepositAuditSheet 22
32	FLOWBEC recovery	05/11/2015	FLOWBEC	MEY-1A-70-HSE-005-D-DepositAuditSheet 23

7 MARINE MAMMALS

Marine mammal sightings were reported for all operations conducted on site. Marine mammal observations from multicast vessel were submitted daily, whilst the sightings for 4 days' operation by the Siem Daya 1 were submitted as a single report (#36).

Grey seals, Harbour porpoise and Common dolphin were observed during operations on site, with no adverse behaviour as a result of the works identified.

Common dolphin pods were observed close to the Siem Daya 1 when the vessel was on station using DP thrusters. No adverse reaction was noted from this relatively close encounter.

Marine mammal reports can be found in Appendix E.

Operation	Date	DOCUMENT
14	10/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 24
15	11/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 25
17	13/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 26
19	15/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 27
20	16/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 28
21	17/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 29
22	18/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 30
23	19/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 31
24	20/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 32
25	21/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 33
26	22/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 34
27	23/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 35
27	23/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 36
29	25/09/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 37
30	04/10/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 38
30	05/10/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 39

30	06/10/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 40
30	07/10/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 41
31	08/10/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 42
32	05/11/2015	MEY-1A-70-TEM-009-D-MarineMammalReportingSheet 43

8 POLLUTION PREVENTION

No pollution incidents to report during the period 10th September to 5th November 2015.

9 NON-NATIVE SPECIES

There was no ballast water uptake or discharge during the TSC installation. A non-native species report for the Siem Daya 1 is included in Appendix F.

	Operation	Date	DOCUMENT
24	No activity on site. Siem Daya mobilised from Hartlepool	20/09/2015	NonNativeSpeciesReport 1

10 ARCHAEOLOGY

No marine archaeology was identified or discovered during the period 10th September to 5th November 2015.

11 WASTE MANAGEMENT

HDD caps removed have been retained by JFMS for re-use.

12 LIST OF ABBREVIATIONS

Abbreviation	
ADCP	Acoustic Doppler Current Profiler
DP	Dynamic Positioning
ECOW	Ecological Clerk of Works
HDD	Horizontal Directional Drilling
JFMS	James Fisher Marine Services
MMO	Marine Mammal Observer
PC	Principal Contractor
ROV	Remotely Operated Vehicle
TSC	Turbine Submarine Cable
TSS	Turbine Support Structure
TTG	Tidal Turbine Generator

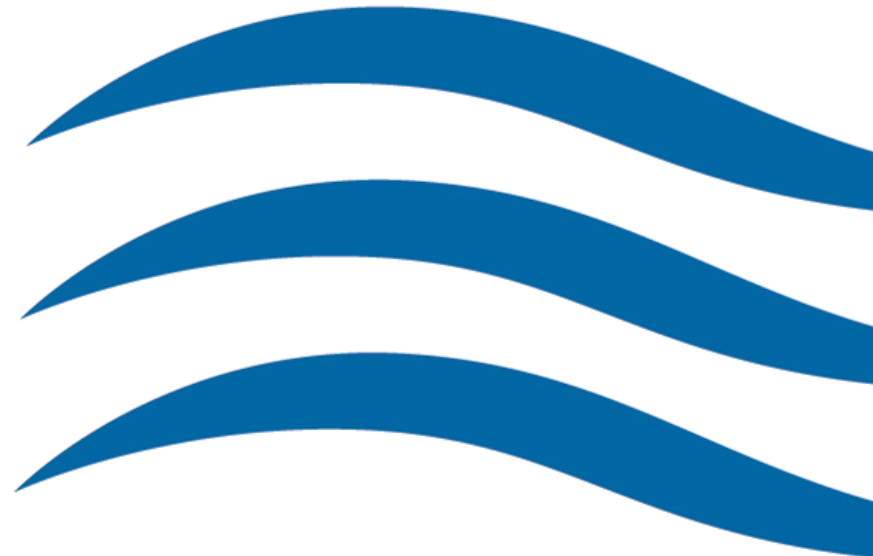
APPENDIX A – ENVIRONMENTAL TOOLBOX TALK PRESENTATION

MEYGEN

THE TIDE OF CHANGE IN CAITHNESS



MeyGen Tidal Energy Project – Phase 1A Offshore Construction - Environmental Requirements



Confidential & Proprietary

Environmental Consents and Documents

- All offshore works on the MeyGen Project Phase 1a must adhere to the following list of consent, licences and documents.
- Copies of consents and licences must be available for inspection on the vessel

Licence / Consent	Related to	SeaPlanner ref
Section 36	Installation of TSC/TSS/TTG	MAR-10-70-HSE-001-I-Section36.pdf
Marine Licence	Installation of TSC/TSS/TTG	MAR-10-70-HSE-002-I-MarineLicence.pdf
Environmental Management Plan	All works	RHK-1A-40-HSE-002-F-EMPCOnstructionWorks.pdf
Construction Method Statement	All works	MEY-1A-40-HSE-004-F-CMSConstructionWorks.pdf
Navigation Safety Plan	All works	MEY-1A-40-HSE-005-F-NSPCOnstructionWorks.pdf
Vessel Management Plan	All works	MEY-1A-40-HSE-006-F-VMPCOnstructionWorks.pdf
Electromagnetic Field Report	All works	MEY-1A-20-HSE-001-F-EMFBestPracticeReport.pdf
ERCoP	All works	FSH-1A-40-HSE-013-F-ConstructionPhaseEmergencyResponseCooperationPlan.pdf
Transport Audit Sheet	All works	MEY-1A-70-HSE-012-I-TransportAuditSheet.xlsx
Deposit Audut Sheet	All works	MEY-1A-70-HSE-014-I-DepositAuditSheet
Non-native Report	All works	MEY-1A-70-HSE-013-I-NonNativeReport.xlsx
Marine Mammal Reporting	All works	MEY-1A-70-HSE-015-I-MarineMammalReportingSheet
Marine Licence	TSC stability measures	MAR-10-70-HSE-003-I-MarineLicenceCableStability.pdf



Specific Site Environmental Requirements

- Marine Mammals
- Pollution Prevention
- Invasive Non-native Species
- Marine Archaeology
- Waste Management



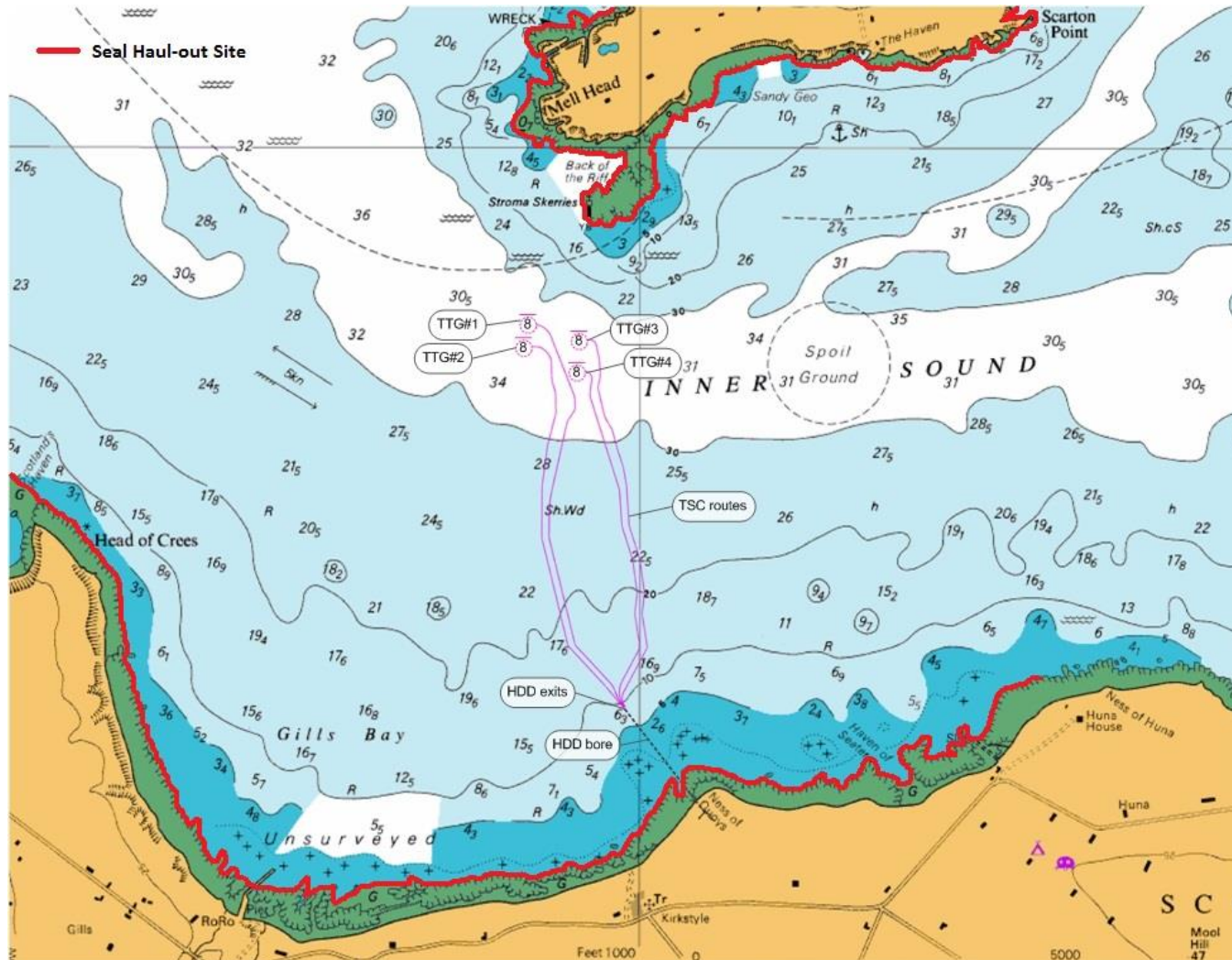
Marine Mammals

Legislation

- All species of cetacean are European Protected Species (EPS) under Annex IV of the Habitats Directive (European Union (EU) Directive 92/43/EEC) because they are classified as being of conservation interest and protection is to maintain or restore favourable conservation status.
- The Wildlife and Countryside Act (1981) provides an extension to existing protections for cetaceans from intentional disturbance to encompass protection from reckless disturbance as an offence.
- Under the Marine (Scotland) Act 2010 it is an offence to kill, injure or take a seal at any time of year except to alleviate suffering.
- It is an offence to harass seals at haul-out sites which have been identified for protection under Section 117 of the Marine (Scotland) Act 2010.
 - The closest seal haul-out sites are at Gills Bay and the island of Stroma

Marine Mammals

Seal haul-out sites



Marine Mammals

Sensitivities

- Noise disturbance (vessel)
- Disturbance (vessel presence and movement)
- Ship strike and collision with ducted propeller
 - bases on the most recent known research (Thompson et al., 2015; van Neer et al., 2015)
there is now very strong evidence that predatory behaviour by grey seals, rather than ducted propeller injuries, is likely to be the main cause of spiral seal deaths. Although this evidence does not completely eliminate ship propellers.
- Pollution and spillage.



Marine Mammals

Mitigation

- Maintenance of a daily marine mammal log by the Principal Contractor, into which, **ANY** interaction will be noted by staff on board the vessel.
- The spatial separation of at least 300m of the Construction Works (HDD exit) from MLWS of the nearest known sensitive areas for seals, the designated haul out site at Gills Bay
- When waiting for slack tide windows vessels will wait in areas where at least a 500m separation distance can be maintained from any sensitive seal haul-out sites.
- The proposed vessel transit routes to all Construction Works ensure that the vessels keep an adequate separation distance from any sensitive seal haul-out sites wherever possible, see VMP.
- Pollution risk is detailed in the Marine Pollution Contingency Plan

Identifying seals



Harbour seal

Grey seal (roman nose)

Whales & Dolphins of the Hebrides

The warm water of the North Atlantic Drift enriches the sea around the Hebrides. HWDT have recorded over 15 species of cetaceans in the area.

Common Dolphin (*Delphinus delphis*) Deilf

Description: Distinctive hour-glass pattern on sides. Keen bow-riders & often very active at the surface.

Size: 1.7 to 2.4m

Habitat: Summer visitor to coastal & offshore areas.

Group Size: Usually 30 to 50.



Risso's Dolphin (*Grampus griseus*) Deilf-Risso

Description: Grey with white scars. Large rounded head (no beak) & tall dorsal fin. Seldom bow-rides.

Size: 2.6 to 3.8m

Habitat: Prefers deep water but may be seen in coastal areas.

Group Size: Usually small groups but can be up to 50.



Human Diver

Size: 1.7m

Harbour Porpoise (*Phocoena phocoena*) Peileag

Description: Small size, rounded head (no beak) & triangular dorsal fin. Seldom bow-rides.

Size: 1.4 to 1.9m

Habitat: Seen year-round in coastal areas.

Group Size: Usually 2 to 5.



White-beaked Dolphin (*Lagenorhynchus albirostris*) Deilf-gheal-ghobach

Description: Robust body distinctive white markings. Short beak prominent dorsal fin. May bow-ride.

Size: 2.5 to 2.8m

Habitat: Typically seen in open water and in the northern Hebrides.

Group Size: Usually small groups but larger groups are seen.



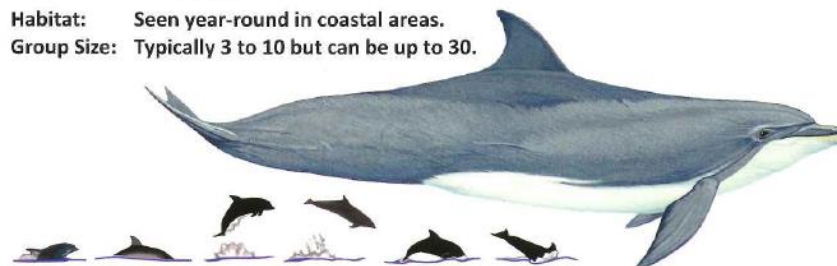
Bottlenose Dolphin (*Tursiops truncatus*) Muc-bhiorach

Description: Large dolphin with prominent dorsal fin & distinct beak. Highly active & often bow-rides.

Size: 1.9 to 3.9m

Habitat: Seen year-round in coastal areas.

Group Size: Typically 3 to 10 but can be up to 30.



Please report sightings or strandings online at www.hwdt.org or call 01688 302620.

Whales & Dolphins of the Hebrides



Orca or Killer Whale (*Orcinus orca*) Mada-chuain

Description: Distinctive black & white pattern with white patch behind each eye. Males have very tall dorsal fins (up to 2m high), females have smaller, curved fins.

Size: 5.5 to 9.8m

Habitat: May be seen almost anywhere in the Hebrides but sightings are rare.

Group Size: 2 to 10.

Human Diver

Size: 1.7m



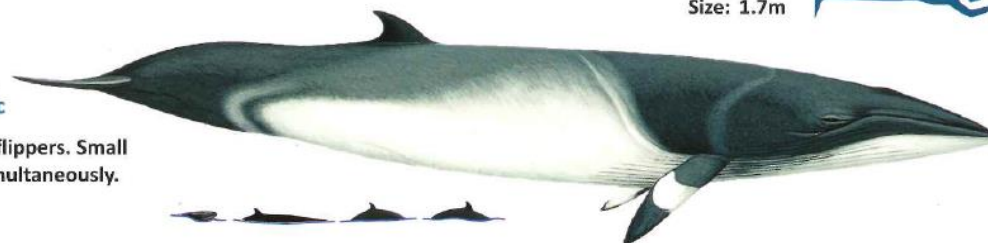
Minke Whale (*Balaenoptera acutorostrata*) Muc-mhara-mhionc

Description: Pointed head, dark body with distinctive white bands on flippers. Small fin two-thirds down its back. Blowholes and fin visible simultaneously.

Size: 7 to 10m

Habitat: Summer visitor to coastal areas.

Group Size: Tend to be solitary but can be seen feeding in groups of up to 10.



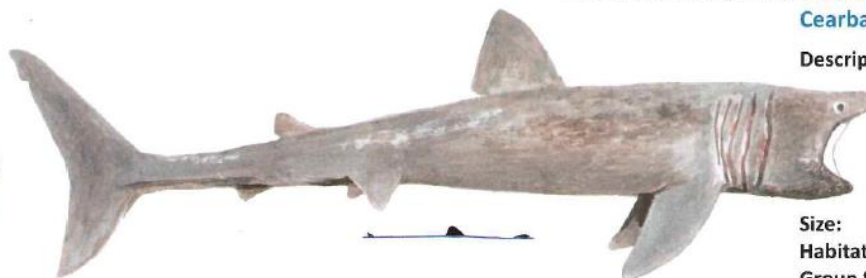
Also look out for ... Basking Shark (*Cetorhinus maximus*) Cearban

Description: Large plankton feeders, known for apparently basking at the surface. Conical snout & enormous mouth which contains bristle-like gill rakers for filter-feeding. Two fins (dorsal & tail) usually visible at the surface.

Size: 6.5 to 9m

Habitat: Summer visitor to coastal areas.

Group Size: Often solitary but can be seen in groups of up to 100.



Designed by selkie.associates@btopenworld.com 01880 730262
Illustrations © Mark Carwardine/Martin Cram (cetaceans) & A. D. Livingstone (basking shark & surface profiles).

Pollution Prevention

Legislation

- International Convention for the Prevention of Pollution from ships (MARPOL) covers pollution of the marine environment by ships from operational or accidental causes, with Regulation 37 of Annex I of MARPOL requires that all ships of 400 gross tonnage (GT) or more to have an approved Shipboard Oil Pollution Emergency Plan (SOPEP).



Pollution Prevention

Mitigation

- Works should be carried out in line with the Marine Pollution Contingency Plan (part of the Environmental Management Plan) and Emergency Response Cooperation Plan
- The vessel will have its own Ship Oil Pollution Emergency Plan (SOPEP) approved by the MCA and refuelling at sea will be minimised and performed according to industry standards.
- Key operatives will be trained in the use of spill kits and clean up procedures in the event of an incident.
- Inventories of all chemicals and materials stored on board and being used in the construction process will be taken as part of a chemical product and waste inventory.
- Pollution Prevention equipment will be recorded in an inventory.
- The designated Mariner Co-ordinator will be responsible for taking and maintaining the inventory.
- All contractors will be expected to submit site specific risk assessments incorporating method statements for review and approval before works commence.
- Details of the incident and the measures that have been taken to deal with the incident will be recorded. In the aftermath of any incident, Marine Scotland and MCA will be briefed and any third parties affected by the incident will also be included in discussions.

Pollution Prevention

Fuel/Oil spill

Point of contact	CGOC Shetland
Address	HM Coastguard
	The Knab
	Knab Road
	Lerwick
	Shetland
	ZE1 0AX
Phone number	01595 692976
Fax	01595 694810

- In the event of a spillage the following actions must be taken:
 - All spillage sightings must be reported to the Vessel Master immediately;
 - The Vessel Master must notify the Coastguard Operations Centre (CGOC) identifying the location and giving an initial indication of the size of the spill (based on the 3 Tier system) source of the spillage if identifiable, and other information as applicable to complete a Pollution Incident Report Form;
- CGOC will direct the onsite support vessel to the location;
- The onsite support vessel will confirm the spillage assessment based on the 3 Tier system and notify CGOC;
- The onsite support vessel will commence clean up/containment operations as applicable;
- CGOC will be responsible for completing the initial Pollution Incident Report Form which will be used to notify MCA, UKHO and other relevant authorities. Subsequent reports will be submitted on a daily basis until the spillage incident is cleared.
- The responsibility for elevating and incident classification from Tier 1 to Tier 2 lies with the CGOC;
- **Three tier system:**
 - Small scale spill (<1,000 litres) local, in house resources will be deployed in the clean-up.
 - Medium sized spill (1,000-150,000 litres) external assistance and resources may be utilised.
 - Major spills (>150,000 litres) national level assistance and resources would be required in line with the National Contingency Plan.

Pollution Prevention

Chemical spill

- Work will be stopped immediately.
- The chemical will be identified and the COSHH sheet and inventory referred to for potential impacts.
- The flow of chemicals will be stemmed.
- The spill will be contained, where possible, and depending on the level of the release the appropriate organisations will be called immediately.
- All contaminated material should be removed off site as soon as possible and disposed of to a licensed waste management facility.
- A report will be sent to MCA and MS in all instances.

Point of contact	CGOC Shetland
Address	HM Coastguard
	The Knab
	Knab Road
	Lerwick
	Shetland
	ZE1 0AX
Phone number	01595 692976
Fax	01595 694810



Invasive Non-Native Species Management

Legislation and routes for introduction

- The International Convention for the Control and Management of Ship's Ballast Water and Sediments was adopted at the International Maritime Organisation in 2004, with the aim of reducing or eliminating the risk of transportation of invasive species around the world.
- There are two main potential routes for introduction of non-native species to the area around the project, by the Construction Works:
 - Introduction of ballast water and / or sediment, containing non-native species; and
 - Installation of structures, fouled with non-native species



Invasive Non-Native Species Management

Mitigation

- A short non-native management report will be provided to Marine Scotland for each vessel arrival on site and each phase of marine equipment / materials installation by MeyGen.
- Key information detailed in each report will be:
 - Source ports for vessel and ballast water uptake / or source of port for marine equipment / materials;
 - Nature and purpose of materials transferred from the port;
 - Amount of ballast water from each port;
 - Amount of ballast to discharge;
 - Conditions at source ports (i.e. any algal blooms, dredging work ongoing, known non-native species);
 - Details of treatment put in place for ballast water of materials / equipment;
 - If ballast water exchange undertaken, details of where, how undertaken and volume of water exchanged.
- The Non-native management report will be completed by the Marine Co-ordinator and approved by the ECoW, before submission to the licensing authority.

Reporting Protocol for the Discovery of Marine Archaeology

Legislation

- Historic Scotland carries the responsibilities of Scottish Ministers with regard to nationally important archaeological and built heritage matters (to the 12 nautical mile (nm) territorial limit) under the Marine (Scotland) Act 2010
- The Offshore Renewables Protocol for Archaeological Discoveries (ORPAD) was implemented by The Crown Estate in 2010 (revised 2014)
- The Protocol addresses discoveries of archaeological interest made on the seabed, onboard vessels, in the inter-tidal zone or on land (The Crown Estate, 2014: 6). Discoveries may comprise archaeological objects, sites or anomalies (visual or digital signatures that are indicative of a possible object or site) encountered during the course of development, maintenance and monitoring activities.



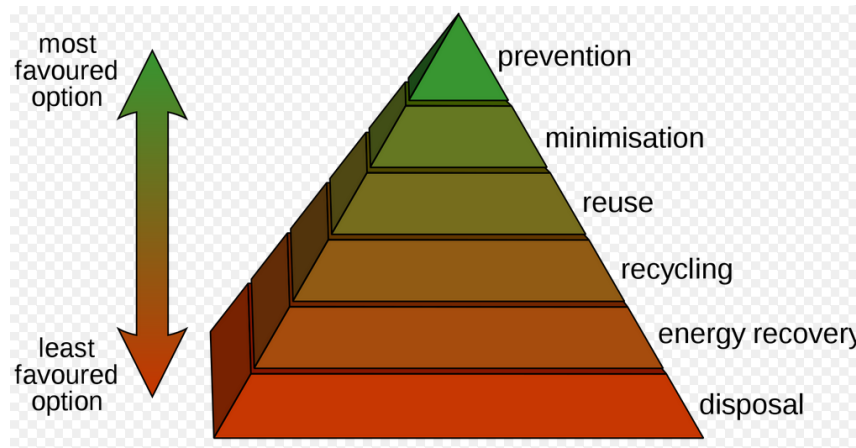
Reporting Protocol for the Discovery of Marine Archaeology

Protocol

- MeyGen will implement and adhere to the terms of the ORPAD as set out in *Protocol for Archaeological Discoveries: Offshore Renewables Projects* (The Crown Estate, 2014).
- In accordance with ORPAD, discoveries made by project staff will be reported to a Site Champion (Marine Co-ordinator) on the vessel or site who will then report to the ECoW. The ECoW will report discoveries to the Implementation Service.
- On receipt of advice from the Implementation Service, the ECoW will ensure the implementation of all recommended actions which may, for example, include conservation advice for finds, the establishment of a Temporary Exclusion Zone (TEZ), the institution of a watching brief or measures to further investigate a site or anomaly.
- The Implementation Service is:
 - Wessex Archaeology Ltd:
 - Portway House. Old Sarum Park, Salisbury, Wiltshire, SP4 6EB.
 - protocol@wessexarch.co.uk
 - 01722 326 867
- On reporting features of high archaeological importance, MeyGen will agree mitigation strategies with Marine Scotland.

Waste Management Plan (WMP)

- Prevention, reduction and re-use using the hierarchy below along with handling, segregation and disposal of waste through approved, licensed contractors.
- All waste will be segregated in line with European and UK Legislative requirements and will be subsequently removed from site by licensed waste removal contractors that are registered with the Scottish Environment Protection Agency.
- All waste carriers will be verified as competent and periodic audits will be carried out to ensure compliance with UK Legislation and local bye-laws.
- Waste transfer notes will be held by James Fisher Marine Services for a minimum of 2 years and quantities and types of waste removed will be communicated in WMP.



APPENDIX B – SIEM DAYA 1 AUDIT

Figure 7 Siem Daya 1 Shipboard Marine Pollution Emergency Plan

OSM		Title: Emergency Drill Matrix OSV Doc No: C-EMERG-2037												Rev.: 7/20.04.2015 Page: 1 of 1	
Vessel: <u>SIEM DAYA 1</u>		Drills and Exercise plan for the year:													
Drill / Exercise		Interval	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Fire (DSHA 01) including (DSHA 16) helicopter crash		Monthly					02	5	9	11, 24					
Abandoning Ship (DSHA 02)*		Monthly					15	11, 25	7, 22	16, 24	02				
Personal Injury / Illness (DSHA 04)		Monthly					22	5, 17	6	21					
EERD Drill		Monthly					21	14	12	13	14				
ERC / MOB boat drill		Monthly					10	21	11	5	09				
Enclosed space rescue (DSHA 14)**		Every 2 month						18		11					
Man over Board / search and rescue (DSHA 03)		Every 3 month							11						
Oil Pollution (SOPEP)		Every 3 month					24			29					
Power Failure (Black out) (DSHA 06 and 08)		Every 3 month						14			14				
Crane / Port Failure / DP (DSHA 19)		Every 3 month							12	16					
Emergency Steering (DSHA 07)		Every 3 month					16			12					
ISPS Drill shift 1		Every 3 month						29							
ISPS Drill shift 2		Every 3 month													
Structural Failure (DSHA 05)		Every 3 month						14				14			
Collision (DSHA 09)		Every 6 month								19					
Grounding (DSHA 10)		Every 6 month													
Flooding (DSHA 11)		Every 6 month													
Heavy Weather Damage / Cargo Shifting (DSHA 12)		Every 6 month					24								
SSAS testing		Every 6 month						29							
Ship to shore emergency response		Every 6 month						15	30						
* Marshall Islands flag requires weekly training. DSHA 1 and 2 shall be done on alternating weeks to fulfil this requirement.															
** SOLAS III/19															
RESCUE FROM HEIGHT									31						

Figure 8 Siem Daya 1 Emergency Drill Matrix

INTERNATIONAL CONVENTION FOR THE CONTROL AND
MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS

BALLAST WATER RECORD BOOK


Name of ship: SIEM DAYA 1

IMO number: 9660102

Gross tonnage: 8594

Flag: CYPRUS

Period from: to:

 **NAUTISK FORLAG**
MARINE NAVIGATION SINCE 1896
Christian Krohgs gate, 16, 0186 Oslo
P.O. Box 68 Sentrum - 0101 Oslo/Norway
Phone: +47 22 00 85 00 - Fax: +47 22 00 85 01
E-mail: sales@nautisk.no

Singapore:
20 Upper Circular Road, B1-22 The Riverwalk - Singapore 058416
Phone: (+65) 6557-0150 - Fax: (+65) 6557-0270
E-mail: singapore@nautisk.no

New Orleans
3321 Division Street
Metairie, LA 70005 - United States
Phone: +1 504 888 4500 - Fax: +1 504 456 7850
E-mail: usa@nautisk.com

Revised :

Figure 9 Siem Daya 1 Ballast Water Record Book

Name of ship : SIEM DAYA 1
IMO Number : 9660102

BALLAST WATER MANAGEMENT OPERATIONS

Date	Item Number	Time/Duration	Location or Lat. - Long.	RECORD OF OPERATIONS				Remarks	Signature of Officer in Charge
				Depth if outside port	Estimated volume of water (m3)	Ballast tanks identity	Method (Pump or gravitate)		
03.09.15 0710	3.1	07:10 08:50	N 52° 06.6' W 042° 12.7'	4052	29.0	13,14	PUMP	Y	
03.09 2015	3.3	09:00 09:40	N 52° 19.4' W 042° 41.2'	4052	120	52,53	PUMP	Y	
08.09 2015	3.2	06:00 07:10	N 58° 59.1' W 002° 52.5'	130	180	32,31	PUMP	Y	TRANSFER 32 → 31
08.09 2015	3.2	08:00 08:20	N 58° 53.7' W 003° 43.4'	288	60	32 42,48	PUMP	Y	TRANSFER 32 → 42,48
13.09 2015	3.6	09:30	STAVANGER	—	—	—	—	—	BWTS RECTIFIED
13.09 2015	3.2	09:35 10:30	STAVANGER	—	140	31,32	PUMP	Y	BWTS TR. 31/32
13.09 2015	3.2	10:35 11:10	STAVANGER	—	60	42,48 32	PUMP	Y	BWTS 42 → 32
15.09 2015	3.2	14:00 15:40	N 55° 05.7' W 000° 31.7'	82	150	32 31	PUMP	Y	BWTS 31-32
15.09 2015	3.3	15:40 18:00	N 54° 53.2' W 000° 50'	63	160	31	PUMP	Y	BWTS

Signature of Master:
Rev. 2010

Figure 10 Siem Daya 1 Ballast Water Operations Record Sheet

OSM
 Title: Garbage Receipt - Disposed to Shore
 Doc No: C-FORM-2233
 Rev.: 3/17.12.2013
 Page: 1 of 1

Receipt No.: 56

Vessel Name : Siem Daya 1
 Date : 13.09.2015
 Port : Randaberg

	Garbage Container	Lorry	Barge	Other
Reception Facility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In accordance with revision of MARPOL Annex V, IMO Resolution MEPC.201(62) We hereby confirm receipt of estimated amount in Cub. Meters (m³) discharged:

At Terminal: Randaberg

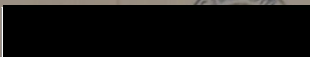
Cat. A	Cat. B	Cat. C	Cat. D	Cat. E	Cat. F	Cat. G	Cat. H	Cat. I
1,5 m ³	0,3 m ³	3,5 m ³	NIL m ³	0 m ³	0,5 m ³	NIL m ³	NIL m ³	NIL m ³

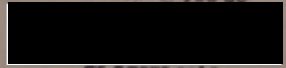
Garbage Categories:

A. Plastic	F. Operational wastes
B. Food wastes	G. Cargo residues
C. Domestic wastes	H. Animal carcasses
D. Cooking oil	I. Fishing gear
E. Incinerator ashes	

Remarks:

Date : 13.09.2015

Signed for vessel : 
 Master/ On. Officer

Signed for Terminal : 
 For Terminal

Gac shipping
 wherever you go
 As Agent only

Note:
 Garbage receipts to be kept onboard together with the garbage Record book for two years

Figure 11 Garbage Receipt

Box 1 (forward)	
Rubber boots	6
Rubber gloves	6
Oil spill suits	6
Natural hand cleaner 5ltrs	1
Aquabreak 20 ltrs	1
Plastic bucket	1
Sprying device	1
Oil spill pads	200
Garbage bags	20
Handbrush	4
Metal dust pans	2
Absorbent rolls 3m	3
Box 2 (firelocker 1)	
Oil spill pads	200
Absorbent rolls 3m	4
Absorbent rolls (small)	8
Oil sorbent boom/mat (long)	1
Box 4 (stbd quarter)	
Oils spill pads	200
Absorbent rolls 30x5cm	12
Oil sorbent boom/mat (long)	2
Oil absorbent boom (long)	1
Oil emergency bag	2

Figure 12 Spill Kit Inventory

APPENDIX C TRANSPORT AUDIT SHEETS



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **14**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	Prepare HDD exits for TSC installation
------------	--

Home Port	Kirkwall	Vessels	C Chariot
Other Ports	Scrabster		
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
25 x 25kg cement bags			
4 x 4tonne rock bags			

Marine Coordinator **R Sneddon**

Date : **10/09/2015**

ECoW

E Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **15**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	Osiris

Activities	Prepare HDD exits for TSC installation
------------	--

Home Port		Vessels	C Chariot
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
	17 x 25kg cement bags		
	3 x 4t rock bags		

Marine Coordinator **R Sneddon**

Date : **11/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **16**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	Osiris

Activities	
------------	--

Home Port	Kirkwall	Vessels	C Chariot
Other Ports	Scrabster		
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
None	***Weathered off***		

Marine Coordinator R Sneddon

Date : 12/09/2015

ECoW

E. Rollings

Date : _____



TRANSPORTATION AUDIT SHEET

Month **Sep**
Year **2015**
Report No. **17**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
------------	--

Home Port	Kirkwall	Vessels	C Chariot
Other Ports	Scrabster		
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
	4 x bellmouths		

Marine Coordinator **R Sneddon**

Date : **13/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **18**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
------------	--

Home Port		Vessels	
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
Nil			

Marine Coordinator R Sneddon

Date : 14/09/2015

ECoW

E. Rollings

Date : _____



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **19**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
------------	--

Home Port		Vessels	
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
4 x bellmouths			

Marine Coordinator **R Sneddon**

Date : **15/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **20**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
------------	--

Home Port		Vessels	
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
4 x 6mm messenger wire	100kg each		

Marine Coordinator **R Sneddon**

Date : **16/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **21**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
------------	--

Home Port		Vessels	
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
	1 x messenger wire @ 100kg		

Marine Coordinator **R Sneddon**

Date : **17/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **22**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
------------	--

Home Port		Vessels	
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
4 x 10mm messenger wires	@ 120kg each		

Marine Coordinator **R Sneddon**

Date : **18/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **23**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, **any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.**

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
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Home Port		Vessels	
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
Pick up bouy x 4	Data Fish x 1		
Round sling x 4			
Polyprop rope 25mm x 1mtr x 4			
A5 polyform float x 4			
Galvanised chain 10mm@3.5mtr x 4			
Clump weight x 4			
Shackle x 8			

Marine Coordinator **R Sneddon**

Date : **19/09/2015**

ECoW **E. Rollings**

Date : _____



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **24**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	Siem Daya 1 transit to Ness Of Quouys from Hartlepool
------------	---

Home Port	Hartlepool	Vessels	Siem Daya 1 / C-Chariot
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
	4 x TSC and clump weight		Siem Daya 1
	1 x temporary DP transponder		Siem Daya 1

Marine Coordinator R Sneddon

Date : 20/09/2005

ECoW

E. Rollings

Date : _____



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **25**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	Siem Daya 1 - DP trials / commence cable lay
------------	--

Home Port	Hartlepool	Vessels	Siem Daya 1 / C- Chariot
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
	4 x TSC and clump weight		Siem Daya 1
	1 x temporary DP transponder		Siem Daya 1

Marine Coordinator R Sneddon

Date : 21/09/2015

ECoW

E. Rollings

Date : _____



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **26**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
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Home Port	Hartlepool	Vessels	Siem Daya 1 / C-Chariot
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
	4 x TSC and clump weight		Siem Daya 1

Marine Coordinator **R Sneddon**

Date : **22/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **27**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	
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Home Port	Hartlepool	Vessels	Siem Daya 1 / C-Chariot
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
	2 x TSC and clump weight		Siem Daya 1

Marine Coordinator **R Sneddon**

Date : **23/09/2015**

ECoW

E. Rollings

Date :



TRANSPORTATION AUDIT SHEET

Month **Sep**
 Year **2015**
 Report No. **28**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	

Activities	Retrieval of DP transponder
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Home Port	Scrabster	Vessels	C-Chariot
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	
Schedule			
Materials to be deposited			
NIL			

Marine Coordinator R Sneddon

Date : 25/09/2015

ECoW

E. Rollings

Date : _____



TRANSPORTATION AUDIT SHEET

Month **Oct**
 Year **2015**
 Report No. **29**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

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Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	Green Marine (UK) Ltd

Activities	Installation of FLOWBEC platofrm
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Home Port	Stromness	Vessels	Green Isle
Other Ports			
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	Drop down camera
Schedule	08/10/15		
Materials to be deposited	FLOWBEC platform - 4000kg		
	3 x 20T clump weight moorings (temporary)		

Marine Coordinator T. Norquay

Date : 08/10/2015

ECoW E. Rollings

Date : _____



TRANSPORTATION AUDIT SHEET

Month **Nov**
 Year **2015**
 Report No. **30**

3.2.2.1 Transportation audit sheet

The licensee must, on the first working day of the month, create, maintain and submit to the licensing authority a detailed transportation audit sheet for each month during which construction associated with the works takes place. The audit sheet must include information on the **loading facility, vessels, equipment, shipment routes, schedules and all materials listed in the licence to be deposited (e.g. piles, pipelines, turbine components, chemicals)**. Where, following the submission of an audit sheet to the licensing authority, any alteration is made to the component parts of the sheet the licensee must notify the licensing authority of the alteration as soon as practicable following the making of the alteration.

If the licensee becomes aware of any materials on the audit sheet that are missing, or an accidental deposit, they shall contact the licensing authority as soon as practicable after becoming aware to advise the licensee on the appropriate remedial action. If the licensing authority is of the view that any accidental deposits associated with the construction works are present then the deposits must be removed by the licensee as soon as is practicable and at the licensee's expense.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	Leask Marine

Activities	Recovery of FLOWBEC platform
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Home Port	Kirkwall	Vessels	C-Chariot
Other Ports	Strabster (FLOWBEC offloaded)		
Shipment route	MEY-1A-40-HSE-003-F-VesselManagementPlanHDD	Equipment	ROV
Schedule	05/11/15		
Materials to be deposited	(RECOVERY) FLOWBEC platform - 4000kg		

Marine Coordinator O. Bethwaite

ECoW E. Rollings

Date : _____

Date : 05/11/2015

APPENDIX D DEPOSIT AUDIT SHEETS

Date : 10/09/2015

Date : 12/09/2015

Date : 13/09/2015

Date : 14/09/2015

DEPOSIT AUDIT SHEET

Date **15/09/2015**

3.2.2.2 Nature and quantity of deposited substances and objects

In addition to the audit sheets required to be submitted to the licensing authority under condition 3.2.2.2, the licensee must, following the commencement of the works, submit **audit reports to the licensing authority stating the nature and quantity of all substances and objects deposited below MHWS under the authority of the licence**. Such audit reports must be **submitted by the licensee at six monthly intervals, with the first such report being required to be submitted on a date no later than six months following the commencement of the works**.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Commencement Date	

Activities	Date		

Materials deposited	Quantity	Weight
Bellmouth on HDD#1	1	10kg
Bellmouth on HDD#2	1	10kg
Bellmouth on HDD#3	1	10kg
Bellmouth on HDD#4	1	10kg
RETRIEVED FROM SEA BED		
Duct end cap and ratchet strap	1	<5kg
Duct end cap and ratchet strap	1	<5kg
Duct end cap and ratchet strap	1	<5kg
Duct end cap and ratchet strap	1	<5kg

Marine Coordinator **R Sneddon**

Date : **15/09/2015**

ECoW

E. Rollings

Date :

Date : 18/09/2015

DEPOSIT AUDIT SHEET

Date **19/09/2015**

3.2.2.2 Nature and quantity of deposited substances and objects

In addition to the audit sheets required to be submitted to the licensing authority under condition 3.2.2.2, the licensee must, following the commencement of the works, submit **audit reports to the licensing authority stating the nature and quantity of all substances and objects deposited below MHWS under the authority of the licence**. Such audit reports must be **submitted by the licensee at six monthly intervals, with the first such report being required to be submitted on a date no later than six months following the commencement of the works**.

Licence:	04577/14/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Commencement Date	

Activities	Date		

Materials deposited	Quantity	Weight
Pick up bouy	4	50kg
Round sling	4	10kg
Polyprop rope 25mm diameter - 1mtr lengths	4	<3kg
A5 polyform float	4	75kg
Shortlink galvanised chain 10mm total 3.5mtr	4	2.2kg per metre
Clump weight	4	800kg
Shackle	4	10kg
Shackle	4	20kg
Data Fish	1	800kg

Marine Coordinator **R Sneddon**

Date : **19/09/2015**

ECoW

E. Rollings

Date :

Date : 20/09/2015

Date : 21/09/2015
Date :

Date : _____
Date : 05/11/2015

APPENDIX E MARINE MAMMAL REPORTS

MARINE MAMMAL RECORDING SHEET



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.			
Date:	11/09/2015	Sub Contractor:	Osiris			25
Vessel	C Chariot	Observer	Stan Groundwater			

Activities	
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[illegible]

R Sneddon
E. Rollings

Date :

MARINE MAMMAL RECORDING SHEET



Activities	
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Date : 15/09/2015



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.			
Date:	16/09/2015	Sub Contractor:	Osiris			2
Vessel	C Chariot	Observer	Stan Groundwater			

[illegible]

R Sneddon
E. Rollings

Date : 16/09/2015

MARINE MAMMAL RECORDING SHEET



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.			
Date:	18/09/2015	Sub Contractor:	Osiris			30
Vessel	C Chariot	Observer	Stan Groundwater			

Activities	
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[illegible]

R Sneddon
E. Rollings

Date : 18/09/2015



Activities	
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Date : 19/09/2015

MARINE MAMMAL RECORDING SHEET



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.			
Date:	23-24 Sep	Sub Contractor:	Osiris			35
Vessel	C Chariot	Observer	Stan Groundwater			

Activities	
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[illegible]

R Sneddon
E. Rollings

Date : 23-24 Sep



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.		
Date:	21/09/2015 to 24/09/2015	Sub Contractor:	Mojomaritime		36
Vessel	Siem Daya 1	Observer	Charles RAMAUGE		

Activities	TSC installation at the Meygen site inner sound for phase 1a : (periode from the 21/09/2015 to 24/09/2015)
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[illegible]

Peter FIDO
E. Rollings

Date : 23/09/2015

MARINE MAMMAL RECORDING SHEET

MARINE MAMMAL RECORDING SHEET



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.			
Date:	05/10/2015	Sub Contractor:	ROVing Eye			39
Vessel	Lodesman	Observer	F Johnson			

Activities	
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[illegible]

F Johnson
E. Rollings

Date : 05/10/2015

Date :

MARINE MAMMAL RECORDING SHEET



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.			
Date:	07/10/2015	Sub Contractor:	ROVing Eye			4
Vessel	Lodesman	Observer	F Johnson			

Activities	
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[illegible]

F Johnson
E. Rollings

Date : 07/10/2015

Date :



Project:	MeyGen	Principal Contractor:	James Fisher Marine Services Ltd.			
Date:	08/10/2015	Sub Contractor:	Green Marine			42
Vessel	Green Isle	Observer	E Rollings			

[illegible]

T. Norquay
E. Rollings

Date :
Date : 07/10/2015

MARINE MAMMAL RECORDING SHEET

APPENDIX F NON-NATIVE SPECIES REPORTS



NON-NATIVE SPECIES REPORT

Date 24/09/2015

Report No. 1

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Licence:	04577/15/0	Principal Contractor:	James Fisher Marine Services Ltd.
Project:	MeyGen	Sub Contractor:	Mojo maritime Ltd
		Vessel:	Siem daya 1

Activities	TSC installation at the meygen site inner sound for phase 1a.
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Home port of ballast water	North Atlantic		
Condition of source port water	Very Good		
Treatment of ballast water	Yes		
Ballast discharged on site	None		
Materials to be deposited	4 x TSC		
Source port of materials	Hartlepool		

Marine Coordinator Peter FIDO

Date : 24/09/2015

ECoW

E. Rollings

Date :