S355
STANDING INSTRUCTION

FOR

WASTE MANAGEMENT AND POLLUTION CONTROL

S355-PRO-SI-HSE-037-E

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Revision Summary

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Contents

1. PURPOSE & SCOPE

The purpose of this procedure is to set rules for a proper waste management and pollution control onboard the S355, ensuring the compliance with MARPOL requirements as a minimum. The procedure will
be supplemented as required on a project specific base to reflect other national legislation and practices, and Client requirements. It is also aimed to summarise the measures taken by Saipem to prevent pollution of the environment during the course of their offshore operations and the emergency preparedness and reporting procedures in place should it occur.

Saipem is committed to pollution prevention and control and Subcontractors are required to follow the same policy. Saipem and its Contractors shall be responsible for disposal of all waste generated by its work activity and shall provide suitable transportation for the removal of such wastes. Disposal of waste from offshore shall be carried out by authorised waste disposal Contractors in compliance with local regulations.

The barge personnel must also implement all the necessary measures to control (and to reduce, if practicable) fuel consumption, waste production, water consumption and discharge.

The present procedure does not address the compliance with mandatory legal requirements. In any case, MARPOL requirements must be complied with as minimum at all times.

Specifically the present procedure will:

- Define responsibility for handling of Waste;
- Classify the different types of waste produced onboard the Saipem S355 ; Define waste segregation methods;
- Identify suitable and safe waste disposal process;
- Define procedures for recording, monitoring and tracking of waste;
- Provide a tool to maintain a high standard of housekeeping and hygiene onboard the barge ; Ensure that Saipem's operational activities are not detrimental to the surrounding environment.

2. REFERENCE DOCUMENTS

2.1. INTERNATIONAL STANDARDS

- **MARPOL 73/78, "International Convention for the Prevention of Pollution from Ships – Annexes I through VI", consolidated 2006 edition**

- Guidelines for the Implementation of Annex V of MARPOL 73/78. International Maritime Organisation.
- Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention) - signed 16 February 1976, in force 12 February 1978 (revised in Barcelona, Spain, on 10 June 1995 as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean)
- Marine Environment Protection Committee "Guidelines for the development of Waste Management Plans" (Circ.317/96)
- Prevention of Oil Pollution Act 1971/86 and amendments

- Merchant Shipping Act 1995 and amendments
- Amendements to the annex of the 1978 relating to the international convention for the prevention of pollution from ships, 1973(Revised Marpol Annex V) adopted on the 15th July 2011

2.2. SAIPEM DOCUMENTS

- POL-COR-HSE-001-E “Corporate Policy - Health, Safety & Environment”
- POL-SPA-HSE-002-E Environmental Policy
- STD-COR-HSEC-003-E “Environmental Reporting”
- STD-COR-HSEC-005-E “Health Plan” section 5.8 “Medical Waste”
- STD-COR-HSE-009-E “Hygiene Surveillance” section 5.10 “Disposal of Solid Refuse”
- FORM-COR-HSE-089-E “Environmental Accident”
- CR-COR-HSEC-008-E Hygiene and Housekeeping
- STD-COR-HSEC-019-E Pollution Control and Waste Management

2.3. S355 PROCEDURE DOCUMENTS

- S355-PRO-HSE-010-E “Hygiene and housekeeping”
- S355-PRO-HSE-015-E “Safe uses of compressed gasses”
- S355-PRO-HSE-017-E “Environmental Accounting”
- S355-PRO-HSE-022-E “Handling of hazardous substances”
- S355–PRO–SI-HSE-037-E Food Waste Grinder Operation Instruction

3. DEFINITIONS

Autoclave	Equipment used for medical waste sterilization.
Food waste	Any spoiled or unspoiled victual substances such as fruits, vegetable, dairy products, poultry, meat, food scraps/particles usually generated in the galley and dining areas.
Garbage or Waste	All kinds of victual, domestic and operational waste generated during the normal operation of the ship and liable to be treated or disposed.

Grey Water	Wastewater to be disposed of, excluding black water
Medical Waste	All waste products that have been in contact with body fluids and are classified as bio-hazardous as they can spread infectious disease. These include hypodermic needles, syringes, bandages, surgical dressings, protective clothing (including gloves) as we" as body tissues and human fluids.
MSDS	Material Safety Data Sheet.
Oily rags	Rags which have been in contact with oil.
Plastic	A solid material which contains as an essential ingredient one or more synthetic organic high polymers. Plastics are used for a lot of marine purpose including but not limited to packing (bottles, containers, etc.), disposable eating utilities, bags, floats, adhesive, floats, etc.
Black Water	Wastewater from water closets, urinals, bidets, including additives; medical areas (pharmacy, hospital, etc.) and from washing basins in those areas, bath tubs and water discharges; spaces housing living animals and other types of wastewater, if mixed with contaminated water already mentioned.
Special Areas	A sea area in which, for technical reasons relating to their oceanographically and ecological condition and to the particular character of its traffic, the adoption of special mandatory methods for the prevention of sea pollution by waste is required. Special areas include: the Mediterranean Sea, Baltic Sea, Black Sea, Red Sea, Gulfs Area, North Sea, Antarctic Area (south of latitude 60° S) and Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea.
Water and oil separator	Equipment with the purpose of separating the oil from the water, to enable its disposal at sea with a concentration lower than the limit pre-established in the pertinent legislation - 15 ppm (15 mg/L) (Marpol 73/78) or in the respective environmental licenses.

4. RESPONSIBILITY

4.1 Master

The Master has the overall responsibilities of the environmental management system of his vessel. The Master shall ensure that the present Waste Management Procedure is adequately implemented onboard the S355 and meets the requirements of MARPOL Annex IV-V.

The Master shall specifically:

- Ensure that WMP is implemented and followed by all barge's personnel.
- Ensure that the appropriate measures regarding waste minimisation, collection and segregation are adequately implemented.
- Ensure that there is no illegal dumping of materials and that the barge complies with the relevant legislation.
- Ensure that all wastes materials are collected, segregated and dispatched in accordance with this procedure.

4.2 Superintendent

The Superintendent is responsible for the construction activities as well as for the environmental implications that such activities may generate.

The Superintendent shall specifically:

- Co-operate with the Master for the WMP implementation as indicated in the present procedure.
- Ensure that the appropriate measures regarding waste minimisation, collection and segregation applicable to the offshore construction works are fully implemented.
- Ensure the correct storage and transfer to a support vessel of all the waste generated on board.
- Supervise and co-ordinate the work of various sub-contractors on board, ensuring that they are aware of S355 waste requirements.

4.3 Chief Engineer

The Chief Engineer is responsible for the maintenance activities as well as environmental implications that such activities may generate.

The Chief Engineer shall specifically:

- Co-operate with the Master for the WMP implementation as indicated in the present procedure.
- Ensure that the appropriate measures regarding waste minimisation, collection and segregation applicable to the maintenance works carried out on board, are fully implemented.

- Co-operate with the Superintendent in the supervision and co-ordination of various sub-contractors on board, ensuring that they are aware of S355 waste requirements.

4.4 HSE Representative

The HSE Representative is the designated person directly in charge of implementing the Waste Management Procedure & Pollution Control.

The HSE Representative shall specifically:

- Ensure that garbage identification placards are properly displayed in accordance with the regulations.
- Ensure that all personnel are aware of the S355 waste management strategy and comply with it.
- Liaise with the onboard personnel on a regular basis regarding any difficulties encountered with waste management.
- Review.waste management practices on board and recommend amendments to the procedure as necessary.
- Arrange and plan adequate environmental awareness training session.
- Verify that the procedures and system for pollution prevention are understood and effectively implemented onboard. He shall ensure that all the documentation has been completed and maintained onboard.
- Compile the Environmental Web Report
- Compile the Event Report

4.5 Chief Mate/Storekeeper

Chief Mate and Storekeeper are responsible of the following:

- To inform about the amount and items of waste planned to be discharged onto supply vessel.
- Gather the number and type of waste skips and container.
- Collect the weight for the single type of waste
- Compile the "Waste Transportation Record" and anticipate it to the waste receiver by mail, and in copy to the HSE Project manager and Construction Safety Officer.
- Ensure that the "Garbage Record Book" is completed and signed as required by Marpol Regulation
- Ensure that the Cargo Manifests are properly filled and signed by the receiver (Carrier) as receipt for a period of at least 2 years.
- Ensure that receipts from the final destination (licensed companies) are received and filed together with the relevant Cargo Manifest for a period of at least 2 years.
- Ensure that Recipients Operation Licenses (that include all information regarding the companies licensed for the waste transportation and final destination as well as the licenses in force with the
- respective effectiveness term and the service provided) are properly filed onboard and kept up-to-date
- Archive a copy of the form in the file and give the other copy to the client's logistic for attachment to his packing list.

4.6 Team Leader

Each Department Head shall nominate a responsible person (Table 1) for checking waste containers /

receptacles and transporting them to the Reception Area for appropriate disposal. The Reception Area is located on the main deck

Table 1 - Team Leader Responsibilities

Team Leader	Waste Responsibilities
Assistant Superintendent	Waste produced in construction activities. Waste produced on the deck
First Engineer	Waste produced in the mechanic workshop
Assistant Mechanic	Waste produced in the mechanic workshop
Ch. Electrician	Waste produced during their activities.
Deck Foreman & Bosun	Waste produced on the deck
Quality supervisor	Waste derived from NDT tests
Doctor	Waste produced in the hospital/sickbay.
Chief Storekeeper	Waste produced in the Store.
Catering Manager	Waste produced in the galley and accommodation cleaning activities

4.7 Waste processing personnel

The operators in charge of using the waste processing equipments (i.e. compactors,grounding machines, when present, and autoclave) shall work in compliance with the manufacture's requirements. They shall be properly trained on the contents of the present procedure as well as the use of the processing equipment under their control, including emergency and defect reporting procedures.

The Chief Engineer shall ensure that waste processing equipment is in good working order and shall instruct the personnel under his responsibility on carrying out repair and periodical maintenance work as required by Manufacturers recommendations and internal maintenance system (AMOS).

4.8 All staff

Each person onboard S355 shall:

- Work according to the instructions of their supervisors and always comply with rules, procedures and good work practices.
- Immediately report to their supervisor all acts and conditions that could have a negative impact on waste management.
-

4.9 Subcontractors

All subcontractors working onboard S355 are required to comply with the provisions of the present WMPPC in addition to all the mandatory regulations

5. Waste Management

A responsible waste management can be accomplished through a hierarchical application of the following
practices :

1 . Reduction
2 . Reuse
3 . Recycling
4 . Treatment
5 . Responsible disposal

Whilst this procedure is written from compliance standpoint, alternative measures which minimise the impact of its treatment/disposal should always be considered. Shore waste facilities available in the area the barge is working should be taken into account.

5.1. General

As the majority of offshore operations occur in MARPOL designated "Special Areas" (refer 3), dumping of
waste to the sea is prohibited, with the exception of food wastes. Therefore all work areas must be regularly cleared of waste materials and extra vigilance is required to prevent windblown waste.
For consistency of application, the procedural rules defined here apply equally to all operational areas, irrespective of MARPOL designation.

The typical waste originated from a pipeline barge like the Saipem S355 can be summarised in 3 main categories as follows:

1. Non hazardous solid waste:

- Municipal (mostly produced by the crew)
  - Organic waste: are considered "organic waste" the one originated by canteen , offices, packaging, (e.g. food waste, used cooking oil, wood, etc.) generated during Saipem S355 activities.
  - Plastics (e.g. plastic drums): it is to be considered as "contaminated plastics" and is all the plastic originated by canteen, offices, packag ing produced during the Saipem S355 activities (apart from plastic bottles and glasses which have been only in contact with water
  - Plastic bottles.
- Industrial (produced primarily deck/workshop activities)
  - Metal (e.g. pipe cuttings, used electrodes and other metal scrap).
  - Non plastic and plastics. They include all drums and containers originated by industrial activities, concrete waste, glass and coating waste.
  - Wood.

2. Hazardous waste:

- Waste Oil Offshore (i.e. Exhausted oil), oil filters and oil contaminated materials
- Chemical and paints: they include refrigerant used for cooling system treatment, chemicals for boiler water treatment, chemicals for fresh water generators water treatment, used absorbent materials, etc.
- Utilities: they include batteries wet & dry, fluorescent tubes, switches, mercury containing devices, etc.
- Hazardous medical waste: they include dressings, hand gloves, sharps and syringes generated from sick bay.
- Liquid waste offshore

For the Saipem S355 Hazard-Non Hazard Waste classification refers to the Table 2 below:

Table 2 - S355 Hazard-Non Hazard Waste classification

Waste Skip	Colour Code	MARPOL V Reference	Waste Classification	Skip Contents
A	**Blue**	Category 4	**Non-Hazardous**	All scrap metal including swarf and metal shavings
B	**Yellow**	-	**Non-Hazardous**	Normal deck sweeping, plastic, wood, waste flux and concrete
D	**Red**	-	**Hazardous**	All oil / chemical / paint contaminated materials, including paint tins, oily rags, empty chemical containers, waste mastic or foam, oil spill

				granules, aerosols, etc.
C	**Green**	Category 5	**Non-Hazardous**	Waste food, paper, wood, etc.

3. Others:

- Offshore Sewage
- Oily Water

All kind of solid waste reported in the table 2 shall be collected in separate steel waste skips segregated by
waste type. The use of skips allows safe waste transportation ashore. Each skip shall bear prominent colour coded labelling of approximately 400mm x 350mm which clearly indicates the skip use in accordance with the table above (see also attachment 9.3).
Special attention shall be taken to ensure that waste skips are not overfilled and that they are covered with
netting or tarpaulin sheeting to prevent waste being lost from skips.

5.2. Waste Management

No goods of any kind shall be dumped overboard at any time and disciplinary actions shall be enforced for
personnel found culpably negligent.
The main phase of the waste management can be summarized as follow:

SEGREGATION
•
COLLECTION
•
STORAGE
•
PROPER DISPOSAL

5.2.1. Waste Segregation, Collection and Storage

Segregation of non-hazardous and hazardous wastes will always be clearly identified in all waste management phases.

Waste shall be continuously collected where it is generated, separated according to Table 2 and stored at
suitable places until handed over to shore facilities. For the collection of waste, collecting containers of suitable sizes and designs shall be provided at the places the waste is generated.

The collecting containers shall be non-combustible or self-extinguishing. At least in the service areas, the
collecting containers shall be liquid-tight and shall be provided with a tight-closing cover.

Waste collected from various areas throughout the ship will be delivered to designated storage locations and will be stored in a manner which avoids health, safety and environmental hazards.

The size and number of waste storage containers depend on the waste volume produced on board and the planned empty possibilities of the containers. The waste material should be stored on board only in suitable containers.

The waste storage area shall be equipped as follows:

a) absorbent material for oil-containing waste
b) pans and barrels in the event of broken containers
c) broom, shovel, etc.
d) first aid kits
e) room ventilation when waste is stored in closed rooms
f) sorting regulations, operating instructions in writing
g) washing facility
h) lighting

All wastes will be segregated into clearly marked containers/skips prior to be delivered to an authorised subcontractor for shore disposal. Each container/skip will be identified by a colour code which clearly indicates its use in accordance with what stated below. Crew members must be advised of what kind of waste should or should not be discarded in them. The waste collection areas can be subject of project modifications.

Non Hazardous waste

Non hazardous waste are segregated and stored in clearly marked skips distinguished by colour as reported in table 3.
Non hazardous waste segregation will be performed according to the following classification:

A . Scrap metal
Metal scraps (including aluminium cans) are stored in the blue labelled skip located on the main deck. Such waste will be kept separate from other waste and retained onboard for disposal in port or to a supply vessel.

B . General deck waste
Normal deck sweeping, plastics, wood, waste flux and concrete are stored in the yellow labelled skip located on the main deck. Such waste will be kept separate from other waste and retained onboard for disposal in port or to a supply vessel.

C. Domestic Waste
Domestic wastes are stored in the green labelled skip located on the main deck. Food waste should be kept separate from other waste and disposed of in accordance with the laws of the receiving country. No foods to be comminute and discharge overboard, inline with the zero discharge policy.
Domestic wastes will be discharged at port reception facilities or sent to shore with a supply vessel.

Table 3 - S355 Non Hazardous waste skips classification

SKIP	COLOUR	CLASSIFICATION	CONTENT	DISPOSAL OPTIONS (Subject to operational areas and requirements)		
				On-board Incineration/ Comminuting	Recycling Onshore	Disposal Onshore
A	Blue	Scrap Metal (Non-hazardous)	All scrap metals including swarf, metal shavings, uncontaminated metal cans and tins, metal wires, damaged slings, etc.		✓	
B	Yellow	Industrial waste (Non-hazardous)	Deck sweepings, plastics, waste flux, concrete spoil, damaged field joint sleeves, excess PU foam, glass, wood, etc.			✓
C	Green	Domestic Waste (Non hazardous)	Waste food, napkins, paper towels, plastic and paper cups, water bottles, etc.	✓		✓

Hazardous waste

The hazardous wastes will be managed accord ing to STD-COR-HSEC-009-E “Control of Substances Hazardous to Health" and in compliance to what reported in the present WMPPC.
Hazardous waste are segregated and stored in red coloured skips as reported in table 4.

Hazardous waste segregation will be performed according to the following classification:

o Chemical waste

All chemicals and hazardous substances shall be delivered to the Saipem S355 accompanied by the appropriate documentation, including the Material Safety Data Sheet, in order to define the safest condition of handling, storing and control of incidental contamination .
The MSDSs are held by the storekeeper, the doctor and the HSE Representative.
These kinds of wastes are stored in the red labelled skip located on the deck. Disposal of these substances to specialized shore centres will be performed in compliance with applicable laws.

o Oil/chemical/paint materials

These kinds of waste are stored in the red labelled skip located on the deck. Oily rags and oil contaminated materials must be kept onboard and discharged to a port reception facility / supply vessel.

o Waste Oil Offshore

All waste oil shall be retained onboard in suitable storage containers (tanks) until it can be transferred ashore. Storage and transfer operations shall be carried out in a manner that prevents spillage. Disposal onshore shall be carried out by an authorised waste disposal contractor. All oil transfer operations shall be recorded in the Oil Record Book (see attachment 9.5).

o Liquid Waste Offshore

Overboard discharge of any chemical waste is prohibited; the efficient use of substances is encouraged to ensure waste is limited to containers that are disposed of using the measures defined within 5.2.4.

EXPLOSIVE	HIGHLY FLAMMABLE	EXTREMELY FLAMMABLE	TOXIC	VERY TOXIC
OXIDISING	HARMFUL	IRRITANT	CORROSIVE	DANGEROUS FOR THE ENVIRONMENT

Small quantities of waste liquid chemicals of these categories shall be retained onboard until the barge returns to port where specialised chemical disposal facilities shall have been arranged. Should large quantities of such waste liquid chemicals be produced (that cannot be stored onboard) then special disposal facilities shall be provided.

o Batteries

Batteries are stored in the red labelled skip located on the A deck. Exhausted batteries will be kept separated from other waste and will be disposed in port or to a supply vessel in compliance with applicable laws.

o Light tubes(*Fluorescent lamps*)

Light tubes(Fluorescent lamps)are stored in the red labelled skip located on the Main deck (close Main Crane Pedesatal). This kind of waste must be kept onboard and discharged to a port reception facility / supply vessel.

Table 4 - Saipem S355 Hazardous waste skips classification

SKIP	COLOUR	CLASSIFICATION	CONTENT	DISPOSAL OPTIONS (Subject to operational areas and requirements)		
				On-board Incineration/Comminuting	Recycling Onshore	Disposal Onshore
D	Red	Special Waste (hazardous)	All oil / chemical / paint contaminated materials including paint tins, oily rags, chemical containers, aerosols, waste mastic, oil spill granules, batteries, medical waste (bagged and sharps bins), exhausted oil, oil filters and oil contaminated materials etc.		✓	✓

o Medical waste

Non-sharp medical waste materials and items infected with human blood, human fluids, human cells and human cell lines will be separately stored and sterilized in designated autoclave located in the sickbay by the barge medical personnel. In order to avoid the risk of transmission of pathogens during the storage, bio hazardous waste shall be collected and kept in clearly labelled containers or plastic bags. After sterilization , non-sharp material will be retained onboard for disposal in port or to a supply vessel.

Sharp and blades waste that can cut or puncture (such as: needles, blades etc.) shall be put in special containers immediately after use, in order to exclude the possibility of injury to personnel during their storage and disposal. Such waste will be kept separate from other waste and retained onboard for disposal in port or to a supply vessel.

Offshore Sewage

On the S355 operates a sewage treatment facilities in accordance with requirements defined within MARPOL Annex IV. Only treated water may be discharged overboard.

Oily Water

The discharge of oily water, such as the like from bilges, shall be via the Oil/Water Separator unit (Namworthy HS5 Mk.II). The unit shall be of a design approved by the IMO administration and be capable of detecting oil content at 15 ppm. Overboard discharge shall cease when this level is exceeded and the oily water redirected to a holding tank. The holding tank contents shall be disposed of ashore by a certified waste oil disposal contractor.

Oily/Water separating equipment shall be subject to the following minimum maintenance and testing;

Annually	cleaning, to include inspection of seals
Routine	function and zero point testing

5.2.2 Waste Information Placards

Garbage information placards made of durable material will be placed in a visible location in different part of the barge in order to provide a continuous reminder on waste management procedures.

The placards shall be printed in languages understood by all barge personnel.

5.2.3 Waste Processing Equipment

The only one waste processing equipment fitted onboard the Saipem S355 is the Autoclave. The Autoclave is used by the doctor to sterilize the medical waste infected with human fluids, in order to avoid the risk of pathogen transmission and is located in the sickbay.

5.2.3 Disposal of Waste

Every time that waste is transferred to reception facilities / supply vessels the Waste Transportation Record (Attachment 9.2) should be filled out and sent with the waste. The Waste Disposal Tracking and Report shall be anticipated by mail to the receiver, and in copy to HSE Project Manager and Construction Safety Officer.

A receipt shall be obtained from the operator of the port reception facilities or the Master of the vessel receiving the waste. The receipt shall specify the type of waste and its estimated amount transferred in cubic metres (m3). Receipts shall be kept onboard with the Garbage Record Book for at least two years.

5.3 Garbage Record Book

All entries made in the Garbage. Record Book (Attachment 9.1) shall be written in English.
All the waste transferred to reception facilities I supply vessels as well as any unintentional discharge, escape or accidental loss must be duly recorded.

Entries should include the following:

- Date and time of operation;
- Position of the Saipem S355;
- Category;
- Estimated quantity of waste;
- Discharge to sea;
- Name of vessel which received the waste from the Saipem S355;
- Name of port or reception facility when discharged direct to shore;
- Certificate/Signature

The S355 Master shall sign each completed page. The Garbage Record Book shall be kept on the Bridge and be available for inspection as required. The book shall be kept on board for a period of two years after the date of the last entry.

DESCRIPTION OF GARBAGE:
Garbage is to be grouped into categories for the purposes of the Garbage Record Book as follows:

A - Plastic	D - Cooking oil	G - Cargo residues
B - Food wastes	E - Incinerator ashes	H - Animal carcass (es)
C - Domestic Wastes	F - Operational wastes	I - Fishing Gear

5 POLLUTION CONTROL MEASURES

5.2 GENERAL

The following section describes the measures to control or eliminate risk of pollution to the environment from systems that are in place on board the Saipem FDS.

Subject to specific legislation of some areas (for Environmental Impact) or locallegislatives orders, more restrictive measure shall be kept for discharge in the sea of water, organic waste, etc.

5.3 BUNKERING – OILS

The Master shall ensure compliance with Local Authority, MARPOL and S.O.P.E.P. requirements.

For all transfers of oil from or to other vessels, the hoses applied shall be fitted with dry disconnect coupling to prevent oil pollution during uncoupling.

Local regulations may require that booms and a support vessel equipped with anti-pollution equipment are on standby whilst this activity takes place.

The Chief Engineer is responsible for ensuring that maximum precautions are taken during bunkering in order to prevent spillage of oil.

Bunkering connections on vessel shall be adequately bonded to prevent spillage and contamination.

5.4 BILGE SYSTEM

A bilge water separation system is installed within the Vessel, according to MARPOL 73/78 including 1997 and 1999 Amendments standards, with effluent oily content not exceeding 15ppm, complete with effluent discharge control and signalling equipment and pump taking suction from the bilge holding tank.

The separated oil is delivered back to bilge holding tank from where it is pumped to the waste oil storage tanks. Treated water is discharged overboard. Operations of oily water separator are documented in the OIL RECORD BOOK (see Appendix 9.8).

5.5 SURPLUS OILS

Contaminated, dirty or un-reclaimable oils are stored in a sludge tank. Dirty lube oils are stored in 1(*One*) dedicated tanks. Oils from both sets of tanks are transferred to the bunkering station on upper deck for disposal on return to port. All tanks containing oil for disposal shall be adequately identified with its contents.

5.6 SANITARY DISCHARGE SYSTEM

Toilet and urinal drains (sewage) are piped to sewage treatment units. Treated water is discharged overboard or to shore reception facility if required. Biological system processes waste water to standards IMO/MARPOL MEPC.2 (VI) ANNEX IV. Each system utilises treatment tank for biological treatment and contact tank for effluent disinfection (chlorine injection system). Plants have aeration blowers, disinfection system (dosing pump and container) and discharge pumps (automatic level control operation).

5.7 EXHAUST SYSTEM

A complete exhaust gas system is provided for all generators, motors, emergency generator aggregate, steam boilers and incinerator. The exhaust pipes are insulated according to the authorities' requirements and the insulation is covered with 1 mm thick stainless steel plating for protection, each are provided with the necessary number of expansion bellows, drain pots, silencers and spark arrestors.

5.8 Training

The HSE Engineer/Marine Safety Officer shall be responsible for ensuring that all barge personnel are familiar with the present Waste Management Procedure and with their responsibilities under the regulations.

Training shall be provided to at least ensure the following:

- All barge personnel shall be familiar with the location of waste collection points and segregation procedures as outlined in this WMP.

- New personnel joining the barge shall be instructed about waste management onboard S355 during the initial induction.

Specific training will be provided to personnel with particular role/responsibility in waste management.

Suitable notices on waste management matters will be displayed on the barge in order to provide a continuous reminder and improve individual awareness on waste management procedures.

6 INCIDENT REPORTING

The Master shall make every effort to avoid situations where oil is spilled. All incidents with in the offshore field/location will be reported to the Client Representative on board. The Master is responsible for notifying the relevant State Pollution Authority when enroute to the offshore field/location together with the respective Project Manager and Safety Managers stating:

o Quantity and nature of spill/rate of leakage;
o Sea state and weather conditions;
o Direction and speed of oil slick;
o Present and potential hazards;
o Action taken;
o Intended future actions;
o *Type of dispersant and quantity available.

*NOTE: - Some State Pollution Control Authorities have specified that dispersants can only be used in special circumstances, and only after the Authorities have granted permission in each individual case.
In case of an oil spill in port or coastal waters, the Master shall offer all assistance possible to the Authorities and act as quickly as possible to prevent contamination of coast and shore installations (See Attachment 9.6 Chemical and Oil Spill Equipment).

The QHSE Representative shall compile the Event Report accordingly to the STD-PRO-HSEC-003-E Event Report procedure and referring to the FORM-COR-HSE-089-E Environmental Incident Investigation Report

Emergency drills with a minimum frequency of six months (see Emergency procedure STD-COR-EMREC-011-E "Oil Spill Pollution") are previewed .

6.2 ESTIMATION OF THE AMOUNT OF OIL

The colour of an oil spill can be used to determine the approximate amount of oil at the sea surface. The following code can be used for this purpose.

COLOUR CODE		OIL AMOUNT (m^3/Km^2)	THICKNESS (10^{-3}mm)
1	SILVER	0.1	0.1
2	RAINBOW	0.3	0.3
3	BLUE	1.0	1.0
4	BLUE / BROWN	5.0	5.0
5	BROWN	15.0	15.0
6	BLACK / BROWN	>25.0	>25.0
7	EMULSION BROWN / ORANGE	1000	1000

Some difficulty may be found in applying the above code from Vessel, therefore the assistance of a helicopter may be required. Such surveillance is useful for identifying thicker concentrations of oil.

7 OIL RECORD BOOK

The Saipem FDS shall be provided with an Oil Record Part I. The Oil Record Book shall be in the form specified in appendix III to MARPOL 73/78, consolidated 2006 edition, Annex I.

The Oil Record Book Part I shall be completed on each occasion whenever any of the following machinery space operations takes place in the ship:

- o Ballasting or cleaning of fuel tanks;
- o Discharge of dirty ballast or cleaning water from oil fuel tanks;
- o Collection and disposal of oil residues (sludge and other oil residues);
- o Discharge overboard or disposal otherwise of bilge water which has accumulated in machinery spaces;
- o Bunkering of fuel or bulk lubricating oil.

Each operation described above shall be fully recorded without delay so that all entries in the book appropriate to that operation are completed . Each completed operation shall be signed by the officer or officers in charge of the operations concerned and each completed page shall be signed by the master of ship.

The Oil Record Book Part I shall be kept in such place as to be readily available for inspection at all reasonable times and shall be kept on board the ship. It shall be preserved for a period of 3 years after the last entry has been made.

An example of the first page of the Oil Record Book Part I is available in attachment 9.5.

9 ATTACHMENTS

ATT 9.1 S355 GARBAGE RECORD BOOK

ATT 9.2 SIMPLIFIED OVERVIEW OF THE DISCHARGE PROVISIONS OF THE REVISED MARPOL Annex V (Resolution MEPC.201 (62)) WHICH ENTERED INTO FORCE ON 1 January 2013

ATT 9.3 WASTE DISPOSAL TRACKING AND REPORT

ATT 9.4 GARBAGE INFORMATION PLACARDS

ATT 9.5 HAZARDOUS CHEMICAL LABELLING

ATT 9.6 EXAMPLE OF OIL RECORD BOOK

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ATT 9.8 BUNKERING CHECK LIST

ATT 6.1 S355 GARBAGE RECORD BOOK

RECORD OF GARBAGE DISCHARGES

Ship's name_____ IMO No._____

Garbage categories:

A: Plastic
B: Food wastes
C: Domestic Wastes (e.g., paper products, rags, glass, metal, bottles, crockery, etc.).
D: Cooking Oil
E: Incinerator Ashes
F: Operational Wastes
G: Cargo Residues
H: Animal Carcass(es)
I: Fishing Gear

Date/Time (Start & Stop)	Position of the ship/Remarks (e.g. accidental loss)	Category (A-I)	Estimated Amount (m^3)	Discharged To Sea?(Y/N)	Incinerated? (Y/N)	Discharge to Port/Facility/Ship? (name/location)	Certification/Signature

Master's signature_____ Date_____

Rev.1 August 2012

ATT 6.2 SIMPLIFIED OVERVIEW OF THE DISCHARGE PROVISIONS OF THE REVISED MARPOL Annex V (Resolution MEPC.201 (62)) WHICH ENTERED INTO FORCE ON 1 January 2013

Simplified overview of the discharge provisions of the revised MARPOL Annex V which entered into force on 1 January 2013

DISCLAIMER: Additional requirements may apply.

This simplified overview is for information or reference purposes only and is not meant as a substitute for the comprehensive provisions in the revised MARPOL Annex V (resolution MEPC.201(62)) or the 2012 Guidelines for the Implementation of MARPOL Annex V (resolution MEPC.219(63)).

<table>
<tr><th>Type of garbage</th><th>Ships outside special areas</th><th>Ships within special areas</th><th>Offshore platforms and all ships within 500 m of such platforms</th></tr>
<tr><td>Food waste comminuted or ground</td><td>Discharge permitted
≥3 nm from the nearest land and en route</td><td>Discharge permitted
≥12 nm from the nearest land and en route</td><td>Discharge permitted
≥12 nm from the nearest land</td></tr>
<tr><td>Food waste not comminuted or ground</td><td>Discharge permitted
≥12 nm from the nearest land and en route</td><td>Discharge prohibited</td><td>Discharge prohibited</td></tr>
<tr><td>Cargo residues[1] not contained in wash water</td><td rowspan="2">Discharge permitted
≥12 nm from the nearest land and en route</td><td>Discharge prohibited</td><td>Discharge prohibited</td></tr>
<tr><td>Cargo residues[1] contained in wash water</td><td>Discharge only permitted in specific circumstances[2] and ≥12 nm from the nearest land and en route</td><td>Discharge prohibited</td></tr>
<tr><td>Cleaning agents and additives[1] contained in cargo hold wash water</td><td rowspan="2">Discharge permitted</td><td>Discharge only permitted in specific circumstances[2] and ≥12 nm from the nearest land and en route</td><td>Discharge prohibited</td></tr>
<tr><td>Cleaning agents and additives[1] contained in deck and external surfaces wash water</td><td>Discharge permitted</td><td>Discharge prohibited</td></tr>
<tr><td>Carcasses of animals carried on board as cargo and which died during the voyage</td><td>Discharge permitted
as far from the nearest land as possible and en route</td><td>Discharge prohibited</td><td>Discharge prohibited</td></tr>
<tr><td>All other garbage including plastics, domestic wastes, cooking oil, incinerator ashes, operational wastes and fishing gear</td><td>Discharge prohibited</td><td>Discharge prohibited</td><td>Discharge prohibited</td></tr>
<tr><td>Mixed garbage</td><td colspan="3">When garbage is mixed with or contaminated by other substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply</td></tr>
</table>

1 These substances must not be harmful to the marine environment.

2 According to regulation 6.1.2 of MARPOL Annex V, the discharge shall only be allowed if: (a) both the port of departure and the next port of destination are within the special area and the ship will not transit outside the special area between these ports (regulation 6.1.2.2); and (b) if no adequate reception facilities are available at those ports (regulation 6.1.2.3).

ATT 6.3 WASTE DISPOSAL TRACKING AND REPORT

Eni Saipem	SAIPEM 355 WASTE TRANSPORTATION RECORD S355–MAN–SMM–E (APP. 7.3 – EI FORMS)	Form: E 7203 No.:

Date :	Time :	Destination :
From (Vessel) : S-355		To :
Location :		Manifest :

Container No.	Container Type	Contents	Precautions	Received

Remarks :

Dispatched by	Received by
Name :	Name :
Signed :	Signed :
Position : Chief Mate	Position :
Date :	Date :

ATT 6.4 GARBAGE INFORMATION PLACARDS

WASTE SKIP	COLOUR CODE	WASTE CLASSIFICATION	SKIP CONTENTS
A		**SCRAP METAL (NON HAZARDOUS)**	*All scrap metals including swarf, metal savings, uncontaminated metal cans and tins, metal wires, damaged slings, etc.*
B		**INDUSTRIAL WASTE (NON HAZARDOUS)**	*Deck sweepings, plastics, waste flux, concrete spoil, damaged field joint sleeves, excess PU foam, glass, wood, etc.*
C		**DOMESTIC WASTE (NON HAZARDOUS)**	*Waste food, napkins, paper towels, plastic and paper cups, water bottles, etc.*
D		**SPECIAL WASTE (HAZARDOUS)**	*All oil / chemical / paint contaminated materials including paint tins, oily rags, chemical containers, aerosols, waste mastic, oil spill granules, batteries, medical waste (bagged and sharps bins), exhausted oil, oil filters and oil contaminated materials etc.*

ATT 6.5 HAZARDOUS CHEMICAL LABELLING

ATT 9.6 EXAMPLE OF OIL RECORD BOOK

MACHINERY SPACE OPERATIONS

Name of ship .....

Official Number .....

Gross tonnage .....

Period From ..... to .....

OIL RECORD BOOK (PART I)
PART I - MACHINERY SPACE OPERATIONS

INTRODUCTION

Part 1 of the Oil Record Book is required to record machinery space operations for every ship of 400Te gross tonnage and above, other than oil tankers, and every oil tanker of 150Te gross tonnage and above.

The following pages list items, which are when, appropriate, to be recorded in the Oil Record Book in accordance with regulation 10 of the Merchant Shipping (Prevention of Oil Pollution) Regulations 1983. The items have been grouped into operational sections, each of which is denoted by a letter code.

When making entries in the Oil Record Book, the date, operational code and item number shall be inserted in the appropriate columns and the required particulars shall be recorded chronologically in the blank space.

Each completed operation shall be signed for and dated by the officer or officers in charge. Each completed page shall be signed by the master of the ship.

LIST OF ITEMS TO BE RECORDED
(A) BALLASTING OR CLEANING OF OIL FUEL TANKS
1. Identity of tank(s) ballasted.
2. Whether cleaned since they last contained oil and, if not, type of oil previously carried.
3. Position of ship at start of cleaning.
4. Position of ship at start of ballasting.

(B) DISCHARGE OF DIRTY BALLAST OR CLEANING WATER FROM OIL FUEL TANKS REFERRED TO UNDER SECTION (A)
5. Identity of tank (s).
6. Position of ship at start of discharge.
7. Position of ship on completion of discharge.
8. Ship's speed (s) during discharge.
9. Method of discharge:
9.1 Through 100ppm equipment;
9.2 Through 15ppm equipment;
9.3 To reception facilities;
10. Quantity discharged.

(C) DISPOSAL OF OIL RESIDUES (SLUDGE)
11. Quantity of residue retained on board for disposal.
12. Method of disposal of residue:
12.1 To reception facilities (identify port);
12.2 Mixed with bunkers;
12.3 Transferred to another (other) tank(s) (identify tank(s));
12.4 Other method (state which).

(D) NON-AUTOMATIC DISCHARGE OVERBOARD OR DISPOSAL OTHERWISE OF BILGE WATER WHICH HAS ACCUMULATED IN MACHINERY SPACES
13. Quantity discharged.
14. Time of discharge.
15. Method of discharge or disposal:
15.1 Through 100ppm equipment;
15.2 Through 15ppm equipment;
15.3 To reception facilities (identify port);
15.4 To slop or collecting tank (identify tank).

(E) AUTOMATIC DISCHARGE OVERBOARD OR DISPOSAL OTHERWISE OF BILGE WATER WHICH HAS ACCUMULATED IN MACHINERY SPACES

16. Time when the system has been put into automatic mode of operation for discharge overboard.
17. Time when the system has been put into automatic mode of operation for transfer of bilge water to collecting (slop) tank (identify tank).
18. Time when the system has been put to manual operation.
19. Method of discharge overboard:
19.1 Through 100ppm equipment;
19.2 Through 15ppm equipment.

(F) CONDITION OF OIL DISCHARGE MONITORING AND CONTROL SYSTEM

20. Time of system failure.
21 Time when system has been made operational.
22 Reason for failure.

(G) ACCIDENTAL OR EXCEPTIONAL DISCHARGES OF OIL

23. Time of occurrence.
24. Place or position of ship at time of occurrence.
25. Approximate quantity and type of oil.
26. Circumstances of discharge or escape, the reasons therefore and general remarks.

(H) ADDITIONAL OPERATIONAL PROCEDURES AND GENERAL REMARKS

MACHINERY SPACE OPERATIONS

Date	Code (Letter)	Item (Number)	Record of operations / signature of Officer in Charge

Signature of Master.....

ATT 9.7 CHEMICAL & OIL SPILL EQUIPMENT

MATERIAL	1 A) QUANTITY	1 B) QUANTITY	1 C) QUANTITY	TOTAL 1
OIL PADS CURTAIN				
SMALL OIL BOOM COIL				
BIG OIL BOOM COIL				
NATURAL HAND CLEANER 5L				
PADS ABS				
PLASTIC SHOVEL				
RUBBER BOOTS				
PROTECTIVE CLOTHING				
SAFETY GLASSES				
DUSTPAN				
RUBBER GLOVES				
HAND PUMP				
TRASH BAG				
RAINCOATS				

ATT 9.8 BUNKERING CHECKLIST

References

ENI Group General Bunkering Procedures.

1.0 General

- Prior to taking any fuel onboard a stability check must be performed.
- The Chief Officer shall liase closely with the 2nd Engineers to determine where the fuel will be loaded. – **See check list Section 5, Item 1.** –
- If in port, Saipem FDS to be secured alongside. If at sea, Saipem FDS to be in full auto DP mode.
- Weather conditions & relative vessel motion to be confirmed as suitable for fuel transfer operations to be carried out safely.
- Fenders are to be deployed (as required) & the supply vessel secured alongside.
- SOPEP Clean-up Equipment to be checked to ensure it is ready for use. SOPEP Manual is located in the Masters Office. In the event of any spill containment measures shall be put in place in line with the requirements of the SOPEP.
- Fuel transfer hoses are to be inspected for damage or deformity prior to being connected.

2.0 Prior to Start of Bunkering Operation

- Fuel Transfer hoses to be rigged & Saipem FDS fuel tank valves, manifold valves & inline valves set-up to load fuel into correct tanks.
- Designated tanks to level recorded (from Saipem FDS tank monitoring system) &, where possible, manually sounded.
- Communications to be established:
  • Between Jetty/bunker vessel & Saipem FDS loading manifold.
  • Saipem FDS loading manifold & Saipem FDS Aft Bridge bunker / ballast panels.
  • ECR & Aft Bridge bunker / ballast panels
  Note: The manifold, Aft Bridge & ECR are to be manned at all times during any fuel loading operation.
- Any SAIPEM Permit to Work for hot work are to be suspended.
- PA announcement made to inform all personnel that 'hot work' restrictions are in force.
- Red (Flashing) warning light on Maindeck (adjacent to Port Forward Manifold) to be switched on.

3.0 During the Operation

- When all positions report ready, the Saipem FDS will give the order to start the fuel transfer. Immediately after the initial start of operations, & at any time during the operation, any of the stations can give the order to stop loading if there is a potential, or real, problem.
- During the fuel transfer operation the levels in the ballast tanks will be adjusted to ensure the vessel remains upright & stable.

4.0 On Completion of Operation

- On completion of the fuel loading operation the hose will be drained prior to it being disconnected.
- Once the hose has been disconnected all the fuel tank valves, manifold valves & inline valves are to be closed.
- PA announcement made to inform all personnel that fuel-loading operations have been completed & that 'normal' operations can be resumed.
- Red (Flashing) warning light on Maindeck to be switched off.
- PTW for any 'Hot Work' to be re-instated as required.
- Designated tanks to level recorded (from tank monitoring system) &, where possible, manually sounded to determine accurate figures for amount of fuel loaded.
- Stability calculations to be re-checked. Ships draughts to be read.

5.0 Summary Checklist – Before Load / Discharge Fuel Oil

5.1 Loading Fuel Oil. – Check Total Quantity to be loaded. – _____

Which Tanks to be filled. – _____ _____ _____ _____
_____ _____ _____ _____ _____ _____
_____

Volume to be loaded in each tank. –_____ _____ _____ _____
_____ _____ _____ _____ _____ _____
_____ _____ _____ _____ _____ _____

Is there sufficient space for it? – _____

Note the total reading on the Fuel Meter. – _____

Set the trip meter to Zero. –

5.2 Loading Area roped off. Signs posted. – No Entry Bunkering in Progress. – No Smoking. – No Naked Flame.

5.3 Sufficient fuel stabiliser to dose the quantity being loaded. Stationed at the loading (fuel meter) station to mix with the fuel as it comes on board. Dosing rate 1.0 lt. per 10,000 (10.0 m3)

5.4 Have all the instructions in **1. General.** And **2. Prior to Start of Bunkering Operation:** Been complied with?

5.5 Discharging fuel instructions as above. Less item 3. – Fuel Stabiliser.-

During the operation and on completion as written above Sections 3. & 4.

- Note the total figure on the Fuel Meter - _____