



**SCOPE OF SERVICES: DRY DOCKING OF LAUNCH KOESTER, PILOT BOAT PLOVER,
PILOT BOAT GANNET/PETREL, WORK BOAT KERSTREL AND BLUEJAY, TUG BOAT
USIBA, TUG BOAT UMBILO, TUG BOAT ENSELENI, TUG BOAT MERLOT AND TUG
BOAT UMKHOMAZI**



TABLE OF CONTENTS

Items	Description
1.	PURPOSE
2.	WORK AREA
3.	SCHEDULE OF THE TASKS TO BE COMPLETED
4.	CONTRACT PERIOD & PRICE ESCALATION
5.	SUPERVISION
6.	TO BE SUPPLIED BY SERVICE PROVIDER
7.	TO BE SUPPLIED BY TNPA PORT OF CAPE TOWN
8.	INFORMATION TO BE OBTAINED ON SITE
9.	OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)
10.	INSURANCE
11.	PENALTIES
12.	GENERAL
13.	SPECIAL CONDITIONS
14.	PRE-QUALIFYING CRITERIA
15.	APPROVALS



1. Purpose

Craft availability is a core function to Transnet National Ports Authority and hence it is critically important to have a statutory maintenance program in place in order to be able to provide uninterrupted service to our customers and to comply with the relevant SAMSA regulations.

The purpose of this contract is to carry out dry dock maintenance of Launch Koester, Pilot Boat Plover, Pilot Boat Gannet/Petrel, Work Boat Kerstrel and Bluejay, Tug boat Usiba, Umbilo, Umkhomazi, Enseleni and Merlot as specified on the Bill of quantities (Annexure C1-C14).

2. WORK AREA

The work on Kestrel, Bluejay, Plover, Gannet/Petrel, Koester will be carried out in Cape Town Harbour at Synchronlift. The work on the Merlot and Enseleni to be carried out in Cape Town Harbour Dry Dock Facilities (Robertson or Sturrock dry dock) including synchronlift. The work on Usiba, Umbilo and Umkhomazi will be carried out in Cape Town Harbour at Sturrock and Robertson Dry Dock.

3. SCHEDULE OF THE TASKS TO BE COMPLETED

3.1 EXTERNAL HULL SUPERSTRUCTURE CLEANING and PAINTING

- Scrape and high-pressure water wash hull. Dispose of the barnacles.

3.1.1 HULL GRIT BLASTING

- (SA2.5 = At least 95% of the surface shall be clean bare steel with at least 90% of any 25mm square clean bare steel. 1 nozzle/hour = 7 m²). **All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry dock and the legal disposal of such.**
- (SA2.5 = At least 95% of the gunwale surface shall be clean bare steel with at least 90% of any 25mm square clean bare steel. 1 nozzle/hour = 7 m²). **All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry dock and the legal disposal of such. (AS and IF required by SAMSA) (Contractor can only invoice if this was carried out)**
- Light wet Sweep blasting to SA 1 to be carried out on hull [It may be necessary to spot blast certain areas to SA2.5, allow 15% for this]. **All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision**



as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry dock and the legal disposal of such.

- Wet spot grit blasting to SA1 to be carried out on main deck, upper deck [it may be necessary to blast certain areas to SA 2.5, allow 15% for this].
- Wet spot grit blasting to SA1 to be carried out on super structure including masts, hook, windlass and other fixtures. It may be necessary to blast certain areas to SA 2.5 allow 15% for this **(contractors to ensure all glass areas are covered and protected against damage from shot blast).**
- Cover transducers with grease to protect against paint.
- Mechanical clean area below Voith table.
- Descale and DE rust Main Engine and Auxiliary Engine Funnels and paint with heat resistant painting as per paint specifications.
- Mechanically prepare decks for painting.
- High pressure wash decks.
- High pressure wash accommodation outside, including superstructure, bridge and monkey island.
- Mechanically prepare accommodation outside, including the superstructure, bridge and monkey island.
- Mechanically prepare all deck equipment such as winches, cranes, anchor windlass for painting.

3.1.2 HULL PAINTING [On Completion of blasting and mechanically cleaning] NOTE: Paint spec requirements might be changed by the paint specialist. Painters to follow paint specialist advise.

- Apply a coat primer paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, Voith table, gunwales, sea chests, and hawser pipes.
- Apply first anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline.
To include underwater and side areas, Voith table, gunwales, sea chests and Voith sea spaces [contractors will be responsible for turning Voith units as required and in a safe manner].
- Apply second anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes, anchors and cutting in between colours (including spare anchor).



- Apply second anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes, anchors and cutting in between colours (including spare anchor).
- Apply coat [black] as per appointed paint representatives' instructions to hull exterior above waterline. To include hawser pipes, rubbing band, gunwales, anchors and cutting in between colours including spare anchor.
- Apply primer coat to prepared exposed areas on superstructure and all decks as per appointed paint representative's instructions.
- Apply final coat [white] to superstructure including masts as per appointed paint representative's instructions.
- Paint vessel names, port of registration and draft marks in white.
- Apply final coat deck green as per appointed paint representative instructions to all decks [apply nonslip sand to decks].
- Paint all deck auxiliary equipment such as winches, anchor windlass and fit Denzo tape on metal fittings.

3.2 SEA CHESTS AND GRIDS

- Remove ships intake grids.
- Scrape and high-pressure wash inside sea chests and sea chest grids.
- Damaged Intake Grid bolts and threads to be repaired and/or replaced. Broken bolt threads to be removed from holes [bolts, are stainless steel, bolts to be supplied by contractor].
- Spray paint inside sea chests and grids as per hull specifications.
- Replace grids upon completion of painting [Ref: Hull painting].
- All sea chest grid bolts to be rewired with stainless steel wire [wire to be supplied by contractor].

3.3 ANODES

- All old anodes to be removed from hull, sea chests and Voith table before shot blasting and returned to vessel.
- All anode studs on hull to be cleaned and protected before shot blasting and painting commences.
- All anode studs of sea chest anodes to be cleaned and protected before shot blasting and painting commences.



3.4 ANCHOR AND CHAIN

- High pressure wash anchor and chain, and spare anchor.
- Sand blast anchor chains (if needed) and paint afterwards.
- Range anchor chain end to end.
- Remark cable.
- Paint anchors.
- Coat cable with boiled linseed oil or equivalent (**linseed oil to be supplied by contractor**).

3.5 VOITH SEA SPACES

Both Port and Starboard Voith sea water space covers to be removed.

Scrape and high-pressure wash completely inside port and starboard Voith spaces [**contractors will be responsible for turning Voith units as required and in a safe manner**].

Inspection of Voith units before painting.

Manhole bolts and threads to be inspected and repaired/replaced as required. Jointing surfaces to be cleaned, inspected for damage and prepared as required. All bolts, studs and stud holes to be cleaned and buffed.

Port and Starboard Voith spaces to be painted with one coat of anti-fouling as per hull specifications [**Ref Item Hull Painting**].

Replace Port and Starboard Voith covers [**new Neoprene jointing to be supplied by contractor**]. All studs/bolts to be coated with suitable anti-seize/anti-corrosion paste before assembly. Contractor to ensure employees are knowledgeable when tightening up covers with neoprene jointing.

Manhole Covers to be inspected by contractor for leaks during flooding.

3.6 SEA CHESTS AND GRIDS

- Voith blades to be scraped and mechanically cleaned by hand with buffing machine to bare metal prior to Voith inspections and painting.

[Grinding of blades will not be permitted].

Blades to be polished and be covered.

- Voith inspections (health check) and tests to be conducted in conjunction with Voith representative and submit report to TNPA.
- Voith blades to be covered with protective covering prior to painting.



3.7 SHIP SEA CHEST VALVES

- Remove seaside valves in entirety
- Valves to be dismantled for SAMSA inspection and refurbished.
- Machine, lap-in/machine valve and seats as required.
- New jointing and packing to be used.
- Jointing between valve and ships side/sea chest to be renewed after cleaning flanges.
- All studs, nuts, and bolts to be cleaned and buffed.
- Stainless steel bolts and nuts to be used where mild steel are found.
- Use anti-seizing paste on bolts.
- All valve and strainer insides to paint with Apexior 3 or equivalent.
- All valve openings to exterior to be blanked off to stop ingress of shot blast and paint.
- All mating surfaces, studs, and nuts to be examined for signs of corrosion.
- Valve parts to be inspected by vessel CMEO before assembly.
- Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked.
- Condition of gland followers and gland studs to be inspected [confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and time of pressure test].
- Reassemble all valves with new joints and new gland packing.
- Pressure tests all sea valves to 2 bars for a minimum 5 minutes [valves should be closed by hand and then "nipped up" for the pressure test.
- Over tightened valves will not be accepted].
- On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor and CMEO for inspection [should any valves fail SAMSA inspection, further SAMSA costs shall be for the contractor].
- Refit valves using new KLINGER jointing and stainless-steel nuts and bolts.
- During flooding valves to be left in open position and checked for leaks and rectified if leaking.

3.8 OVERBOARD VALVES

- Remove seaside valves in entirety.
- Valves to be dismantled for SAMSA inspection and refurbished.
- Machine, lap-in/machine valve and seats as required.
- New jointing and packing to be used.
- Jointing between valve and ships side/sea chest to be renewed after cleaning flanges.
- All studs, nuts and bolts to be cleaned and buffed.



- Stainless steel bolts and nuts to be used where mild steel are found.
- Use anti- seizing paste on bolts.
- All valve and strainer insides to paint with Apexior 3 or equivalent.
- All valve openings to exterior to be blanked off to stop ingress of shot blast and paint.
- All mating surfaces, studs, and nuts to be examined for signs of corrosion.
- Valve parts to be inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected **[confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and time of pressure test]**.
- Reassemble all valves with new joints and new gland packing.
- Pressure test all sea valves to 2 bars for a minimum of 5 minutes **[valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]**.
- On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor and CMEO for inspection **[should any valves fail SAMSA inspection, further SAMSA costs shall be for the contractor]**.
- Refit valves using new KLINGER jointing and stainless-steel nuts and bolts.
- During flooding, valves to be left in open position and checked for leaks and rectified if leaking.

3.9 TANKS

- Contractors to open and reseal tanks using new neoprene jointing.
- Contractors to supply own ventilation fans. Tank to be emptied.
- Plugs, male and female, threads to be cleaned and inspected. New leather joints to be made.
- All tank covers to be removed.
- All studs, nuts and bolts to be buffed and cleaned.
- Tanks to be cleaned for ship staff and SAMSA inspections.
- Final inspection by ships staff before tank covers are replaced.
- Tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.
- Aft Peak Ballast Tank
- Fore Peak Ballast Tank
- L.O. Tank Port and Starboard storage. **(Contractor to supply storage holding tank).**
- Voith L.O Storage Tank Starboard. **(Contractor to supply storage holding tank).**



3.9.1 FRESH WATER TANKS

- Fresh water tanks to be emptied.
- Plugs, male and female threads, to be cleaned and inspected. New leather joints to be made.
- Fresh water tanks covers' to be removed.
- Fresh water tanks cover mating surfaces to be mechanically cleaned and prepared.
- New Neoprene jointing to be supplied for tanks covers.
- Fresh water tanks to be high pressure water washed. Water to be removed and tanks dried.
- Fresh water tanks to be degreased and mechanically cleaned for ship staff and SAMSA inspection.
- Fresh water tanks to be inspected by ships staff and by Appointed Paint Representative.
- Fresh water tanks plugs' to be refitted.
- Final inspection by ships staff before tanks covers are replaced.
- Fresh water tanks covers' to be replaced. Anti-seize paste to be used on all nuts and bolts.

3.9.2 FUEL TANKS

- Fuel tanks to be emptied.
- Fuel tanks to be emptied into external storage tanks (10 M³) [**Contractor to supply storage tanks**].
- Fuel tank covers to be removed.
- Fuel tank studs, nuts and bolts to be cleaned and buffed.
- Fuel tank covers mating surfaces to be mechanically cleaned and prepared.
- New oil resistant Vellumoid jointing to be supplied for fuel tank covers.
- Fuel tank to be cleaned for ship staff and SAMSA inspection.
- Final inspection by ships staff before covers are replaced.
- Fuel Double Bottom Tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.

3.9.3 FOAM TANKS

- Fuel tanks to be emptied.
- Fuel tanks to be emptied into external storage tanks (10 M³) [**Contractor to supply storage tanks**].
- Fuel tank covers to be removed.
- Fuel tank studs, nuts and bolts to be cleaned and buffed.
- Fuel tank covers mating surfaces to be mechanically cleaned and prepared.



- New oil resistant Vellumoid jointing to be supplied for fuel tank covers.
- Fuel tank to be cleaned for ship staff and SAMSA inspection.
- Final inspection by ships staff before covers are replaced.
- Fuel Double Bottom Tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.

3.9.4 DIRTY OIL TANKS

- Dirty oil tanks to be emptied.
- Remove all pipe work and tank covers to open tank.
- All studs, nuts, and bolts to be cleaned and buffed.
- Dirty oil tank to be cleaned for ship staff and SAMSA inspection.
- Final inspection by ship staff before covers are replaced.
- Dirty oil tank cover to be replaced. Anti-seize paste to be used on all nuts and bolts.
- Replace neoprene gasket and pipe work on completion.

3.9.5 BLACK/GREY WATER TANK

- Contractor to pump out grey/black water and provide disposal facility $\pm 4M^3$ and dispose of grey/black water and provide disposal certificate.
- Contractors to open and reseal tanks using new neoprene jointing.
- Contractors to supply own ventilation fans.
- Rules for entering confined spaces to be adhered to.
- Grey/black water tanks to be emptied.
- Remove all pipe work to open tank.
- Grey/black water tank covers to be removed.
- All studs, nuts and bolts to be cleaned and buffed.
- Grey/black water tanks to be cleaned for ship staff and SAMSA inspection.
- Final inspection by ships staff before covers are replaced.
- Grey/black water tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.
- Replace neoprene gasket and all pipe work on completion.

3.9.10 ANCHOR CHAIN LOCKERS

- Contractors to open and reseal tanks using new neoprene jointing.
- Contractors to supply own ventilation fans.
- Rules for entering confined spaces to be adhered to.



- All studs, nuts and bolts to be cleaned and buffed.
- Chain Locker tank to be cleaned for ship staff and SAMSA inspection.
- Final inspection by ships staff before covers are replaced.
- Anti-seize paste to be used on all nuts and bolts.
- Replace neoprene gasket and all pipe work on completion.

3.10 FENDERS

- Remove and refit vertical fender (stern).
- Remove and refit horizontal fenders.
- Replace fender locating pins as required.
- Straighten fender locating pins as required.
- Renew vertical fender palms as required.
- Repair stern horizontal fender housing.
- Renew sausage fender tensioning screws.
- Renew fender straps.
- Renew fender chain.
- Renew fender straps ratchet.
- Miscellaneous repairs to stern section.
- Repair belting port.
- Repair belting starboard.
- Repair port fender box.
- Repair starboard fender box.
- Mechanically clean fender housing FWD, paint the space before fitting the fenders.
- Mechanically clean fender housing AFT, paint the space before fitting the fenders.
- Remove and replace tyre fenders to facilitate painting the area obstructed by fenders.

3.11 VOID SPACES

- Tanks to be emptied.
- Tanks covers' to be removed.
All studs, nuts, and bolts to be cleaned and buffed.
- Tanks covers' mating surfaces to be mechanically cleaned and prepared.
- New neoprene jointing to be supplied by the contractor for Tank covers.
- Tank to be cleaned for SAMSA inspection.
- Tanks to be inspected by ships staff.
- Final inspection by ships staff before covers are replaced.
- Tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.



3.12 KEEL COOLERS

- Remove, clean, pressure test and refit keel coolers (**repair where necessary**).
- Replace gasket and anodes (**Contractor to supply**).

3.13 PLATE COOLERS

- Take measurement of coolers.
- Loosen the coolers.
- Clean the coolers, replace anodes, and damaged gaskets (**contractor to supply**).
- Retighten the cooler to original dimensions.
- Test the cooler for leaks.
- HT Plate Coolers
- LT Plate Coolers
- L.O Plate Coolers
- Winch Coolers

3.14 MAIN ENGINE AIR COOLERS (Intercoolers)

- Punch and clean port and starboard coolers.
- Apply Apexior no.3 to inside of cover.
- Renew O-ring (**contractor to supply**).
- Pressure test coolers to 5 bars to test for leaks. Renew gasket on coolers and pipework (**contractor to supply**).
- Renew anodes as required (**contractor to supply**).

3.15 MAIN ENGINE LUBE OIL COOLERS

- Ultrasonic cleaning of lube oil filters.
- Ultrasonic cleaning of self-cleaning filters.
- Remove and clean intercoolers.

3.16 TOWING WINCH COOLER

- Ultrasonic cleaning of hydraulic filter.

3.17 FIRE MONITORS

- Electrical supply to be isolated.



- Limit switches to be checked and adjusted if needed.
- Fire monitor to be removed from tug.
- Fire monitor to be dismantled.
- All seals to be renewed.
- Electric motors to be overhauled.
- Fire monitor to be painted after assembly.
- Test fire monitors when tug is out of the dock.

3.18. PIPEWORK AND STEEL WORK

- Contractor to make provision for steel work.

3.19 WASTE MANAGEMENT

- Supply water for blasting and cleaning.
- Provide waste collection and disposal facilities [**contractor to supply TNPA with disposal certificate**].
- Contents of bilge and sludge tanks to be disposed of legally. [**Certificate of bilge sludge liquid to be supplied to TNPA, to include location of disposal and volume**].

3.20 CHEMIST

- Chemist to test and issue gas free certificates for tank entry [**one before entry into tanks for cleaning, and one before entry for SAMSA**].

3.21 DRYDOCK

- Hire of shore crane, contractor to supply equipment [**only actual days used to be invoiced**].
- Hire of cherry picker, contractor to supply equipment [**only actual days used to be invoiced**].
- Hire of Hyster, contractor to supply equipment [**only actual days used to be invoiced**].
- Arrange 380V 3 phase shore supply + extension cable.
- Arrange ablution facilities.
- Arrange fire main supply.

3.22 HOTWORK

- Supply Fire Marshall [**only days used to be invoiced**].
- Supply hot work permit.



3.23 BILGE CLEANING AND GENERAL CLEANING

- Deck plates to be removed and bilges cleaned.
- Bilges to be degreased and wiped down.
- Provide labour for cleaning of bilges and assisting TNPA staff in the engine room.
- Provide labour for assisting TNPA staff for cleaning of accommodation and bridge.
- Bilges to be pumped out into shore tank (contractor to supply tank, pump and certified hose).

3.24 THICKNESS TESTING

- NDT testing of hull plating including Voith platform and sea chest as per SAMSA requirements; plus, or minus 80 points.
- NDT testing of port and starboard void turntable and vertical sides.
- NDT testing of both port and starboard foam tanks internally.
- NDT testing of port and starboard hawser pipes.
- NDT testing of main sea water cross over pipe.
- NDT testing of main deck and bridge deck.
- NDT testing of port and starboard anchor chains.
- NDT testing of port and starboard exhaust funnels.
- Supply certificate of results at least 3 days after NDT testing prior to re-floating of vessel.

3.25 WATERTIGHT COMPARTMENT

- To clean all watertight doors rubber grooves and fit new rubbers on potholes and watertight doors.
Contractor to supply rubber material and glue.
- Watertight doors
- Hatches
- Port Holes

3.26 SCAFFOLDING

- Erect safe access scaffolding/gangway to vessel.
- Erect scaffolding in accessible heights (anodes, fender valve work and coolers).



3.27 DIVERS

- Provide divers during docking of craft (min 12 hours).
- Provide divers during undocking of craft (min 8 hours).

3.28 MISCELLANEOUS WORK

- Budget for skilled labour 1x 40 Hours.
- Budget for semi-skilled labour 1 x 40 Hours.
- Inspection of cathodic protection probe

4. CONTRACT PERIOD & PRICE ESCALATION

- The contract shall be on the as and when required basis from 2025/2026, 2026/2027 and 2027/2028 financial period.
- No price escalation will be allowed after the award of the tender.

5. SUPERVISION

The Service Provider shall carry out the “work” or “services”, under supervision of TNPA Marine Officers, in line with the bill of quantities as presented by the TNPA Project Manager.

6. TO BE SUPPLIED BY SERVICE PROVIDER

The Service Provider shall be responsible for providing the required labour, material, tools, workshop facilities, personal protective clothing and transport for equipment’s for the proper completion of the works.

7. TO BE SUPPLIED BY TNPA PORT OF SALDANHA (FREE ISSUE)

- The Project Manager or Tug officers will provide and arrange access to the work site.
- Paint, paint and all coatings will be free issued by Transnet.
- Anodes will be free issued by Transnet.

8. INFORMATION TO BE OBTAINED ON SITE



The Service Provider shall visit the sites of the proposed work and acquaint themselves with the nature of work, the condition under which the work is to be performed, the means of access to the site including any limitations or other authorities, and all matters that may influence or affect the contract.

9. OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)

- For the purpose of the contract, the Occupational Health and Safety Act 1993 (Act No 85 of 1993) and works to be executed in accordance with the OHS Act including relevant MOS Regulations.
- The Service Provider is required to undergo the TNPA SHE Induction Program before commencement of services.
- The Service Provider need to obtain TNPA Security permits to access the Port prior to commencement of services.
- The Service Provider is required to submit a Health and Safety File (SHE FILE) for TNPA's approval within seven (7) working days after receiving letter of award. Services will not commence if SHE File has not been submitted and approved. Service Provider to ensure SHE File is approved within two (2) weeks after receiving letter of award.
- Service provider will be liable to penalties if the SHE File is not submitted and approved within the specified period indicated above.
- The Service Provider must adhere to all Safety, Health, Environmental and Security requirements of the Port. Failure to do so can and will lead to termination of the contract.
- The Service Provider is to equip their employees with the necessary Personal Protective Equipment (PPE) when accessing the Port and its facilities.

10. INSURANCE

The Contractor shall in effect be liable for, in his own interest, any insurance of which he deems necessary to cover any loss and/or damage to TNPA Port of Cape Town property/assets, against any legal liability for accidental death, injury or damage to third party and/or property arising out of or in connection with, the requirements of this contract.

11. PENALTIES



11.1.1 The Services Provider shall at least within two working days of the scheduled service, confirm with TNPA Project Manager of such service and/or inform the TNPA Project Manager of the inability to render the service in accordance with the Service schedule, as provided by the Service Provider.

11.1.2 Failing to complete the work within the agreed service schedule, the Service Provider shall pay to Transnet as penalty the sum of R 5 000 (Five thousand Rands) for every day or part thereof during which the works remain incomplete, or services not rendered.

12. GENERAL

No amendment or variation of, or addition to this agreement shall be of any force or effect unless reduced to writing and signed by both parties.

13. SPECIAL CONDITIONS

- Principal contractor should have a technical representative and safety officer/representative on site, all the time during the dry dock period of a craft.
- Some of the planned work may be cancelled at TNPA's discretion after inspection in dry dock
- Additional work may be added subject to acceptance of written quotation and issue of variation order (i.e. no quote no payment)
- Contractor to allow for miscellaneous costs; scaffolding and rigging, electricity supply etc. to complete the planned work.
- Contractor to supply shore power & water to carry out scope of works.
- Contractor to provide their own electrical supply for heavy electrical equipment e.g. welding machines, high pressure washers etc. If heavy equipment is connected to the crafts' electrical supply and damage occurs, the repairs will be for the contractors account.
- Contractor to supply all tools & equipment necessary to carry out the scope of works.
- Contractor's tools and equipment to pose no risk to TNPA assets or environment.
- All high pressure washing to be done with suitable equipment of min 220 bar.
- Spray painting of the hull and bulwarks to be done with suitable airless spray equipment. (As per paint specialist specification).
- Safety precautions for entry into confined spaces to be adhered to at all times, therefore tanks are to be gas freed.
- Low voltage lights & intrinsically safe tools are to be used inside the tanks.
- Contractor to demonstrate and or have knowledge of the propulsion system of the crafts.
- Contractor to demonstrate and or have knowledge of Turbo chargers.
- Contractor to clean dry dock and dispose of waste. Environmental regulations apply
- Contractor to submit Risk Assessment with the tender pack.



- Each item to be quoted for and grand total to be shown, indicate if item is not quoted for.
- Pressure test all overboard valves on the water side of the valve to 2 bar for a minimum 5 minutes.
- Should any valves fail SAMSA inspection, further SAMSA costs will be for the contractor.
- Hull and deck thickness test will be done (charged per point) contractor to submit report.
- TNPA Representative to witness ALL tests.
- Contractor not following safe practices will be stopped from carrying out the works.

14. PRE- QUALIFYING CRITERIA

Should a tender not adhere to the following pre-qualification and technical criteria, the tender would not be considered and would be disqualified:

- Commitment on the Company letterhead to produce a 24-month guarantee for the below underwater paint work (hull) and valves.



Dry Dock Specification– LAY UP

4 X TUGBOATS, 3 PILOT BOATS, 2 WORKBOATS and 2 Launches					
ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	AMOUNT
1		EXTERNAL HULL CLEANING and PAINTING			
1.1		HULL CLEANING			
	1.1.1	Scrape and high pressure water wash hull exterior up to, and including underwater, gunwales.	M ²	1270	
	1.1.2	Removed Growth to be disposed by contractor			
	1.1.3	Cherry Picker or crane to be supplied by contractor			
	1.1.4	<i>Cover anodes studs to protect them from paint</i>	ea	176	
	1.1.5	cover transducers with grease to protect against paint			
	1.1.6	Make sure removed tank drains are plugged			
	1.1.7	Mechanically clean area below Voith table			
	1.1.8	Descale and DE rust Main Engine and Auxiliary Engines Funnels and paint with heat resistant painting	ea	4	

1.2		SEA CHESTS AND GRIDS			
	1.2.1	Remove ships intake grids	ea	2	
	1.2.2	Remove old anodes replace all (<i>TNPA to supply anodes</i>)	ea	88	
	1.2.3	Scrape and high pressure wash inside sea chests and sea chest grids.			
	1.2.4	Damaged Intake Grid bolts and threads to be repaired and/or replaced. Broken bolt threads to be removed from holes. [<i>Bolts are stainless steel</i>]			
	1.2.5	Spray paint inside sea chests and grids as per hull specifications			
	1.2.6	Replace anodes inside sea chests			
	1.2.7	Replace grids upon completion of painting	ea	2	
	1.2.8	All sea chest grid bolts to be rewired with stainless steel wire. [<i>Wire to be supplied by owners</i>]	ea	12	



Dry Dock Specification– LAY UP

	1.2.9	Apply one coat primer paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, propeller table, gunwales, sea chests, hawser pipes.	M ²	1270	
	1.2.10	Apply one coat anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, propeller table, sea chests, and Voith sea spaces. <i>[Contractors will be responsible for turning Voith units as required and in a safe manner]</i>	M ²	1270	
	1.2.11	Apply final coat as per appointed paint representative's instructions to hull exterior above waterline. To include gunwales, rubbing band, hawser pipes, anchors, and cutting in between colours (including spare anchor)	M ²	450	
	1.2.12	Paint vessel names, port of registration and draft marks In white (port and Stb'd side)	ea	2	
	1.2.13	Paint funnels with heat resistant paint as per manufacturers specification.	ea	4	
	1.2.14	Paint all decks with green paint as per manufacturer's specification and put non-slip sand on decks.	M ²	450	
	1.2.15	Paint accommodation outside, including the superstructure, bridge and monkey Island.	M ²	200	
	1.2.16	Paint all deck auxiliary equipment such as winches, cranes, anchor windlass and fit denzo tape on metal fittings			

1.3		ANCHORES AND CABLES	unit		
	1.3.1	<i>High pressure wash anchor and cables and spare anchor.</i>	ea	2	
	1.3.2	<i>Remark cable.</i>	ea	1	
	1.3.3	<i>Coat cable with boiled linseed oil or equivalent.</i>	ea	1	
	1.3.4	<i>Sand blast anchor chains and paint afterwards</i>	ea	1	
	1.3.5	<i>Range anchor chain end to end</i>	ea	1	

Dry Dock Specification– LAY UP

1.4		VOITH SEA SPACES			
	1.4.1	Both Port and Starboard Voith sea water space covers to be removed. <i>[Four covers]</i>	ea	4	
	1.4.2	Scrape and high pressure wash completely inside port and starboard Voith spaces. <i>[Contractors will be responsible for turning Voith units as required and in a safe manner]</i>	ea	4	
	1.4.3	Inspection of Voith units before painting			
	1.4.4	Manhole bolts and threads to be inspected and repaired/replaced as required. Jointing surfaces to be cleaned, inspected for damage and prepared as required. All bolts, studs and stud holes to be cleaned and buffed.			
	1.4.5	Any Unplanned work on Voith Units subject to inspections			
	1.4.6	Port and Starboard Voith spaces to be painted with one coat of anti-fouling as per hull specifications. <i>[Ref Item Hull Painting][Contractors will be responsible for turning Voith units as required and in a safe manner]</i>			
	1.4.7	Replace Port and Starboard Voith covers. <i>[New Neoprene jointing to be supplied by contractors. All studs/bolts to be coated with suitable anti-seize/anti-corrosion paste before assembly. Contractors to ensure employees are knowledgeable when tightening up covers with rubber jointing]</i>			
	1.4.8	Manhole Covers to be inspected by contactor for leaks during flooding			

1.5		VOITH BLADES	ea	10	
	1.5.1	Voith blades to be scraped and mechanically cleaned by hand with buffing machine to bare metal prior to Voith inspections and painting. <i>[Grinding of blades will not be permitted]. Blades to be polished and be covered.</i>			
	1.5.2	Voith inspections and tests to be conducted in conjunction with Voith representative.			
	1.5.3	Any Unplanned work on Voith Units subject to inspections			
	1.5.4	Voith blades to be covered with protective covering prior to painting.			



Dry Dock Specification– LAY UP

2		SHIPS VALVES			
	2.1	SHIPS SEA CHEST VALVES	unit		
		Main sea induction strainer isolating butterfly valves DN 250	ea	2	
		<i>Main sea induction butterfly valves DN 250</i>	ea	2	
		<i>Main fire pump sea induction butterfly valves DN 350</i>	ea	2	
		<i>Sea intakes air vent valves DN 50.</i>	ea	4	
		<i>Voith vacuum breaker valves DN 50</i>	ea	2	
		<i>Clean and paint induction strainers, replace neoprene gasket</i>	ea	4	
	2.1.1	<i>Valves to be dismantled for SAMSA inspection and refurbished. Machine, lap-in/machine valve and seats as required. New jointing and packing to be used. Jointing between valve and ships side/sea chest to be renewed after cleaning flanges. Stainless steel bolts and nuts to be used where mild steel are found. Use anti-seizing past on bolts. All valve and strainer insides to paint with Apexior 3 or equivalent. All valve openings to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.</i>			
	2.1.2	Remove sea valves in entirety			
	2.1.3	All openings to be blanked off to stop ingress of shot blast/paint [Ref Item 1.2 : Hull and Superstructure Grit Blasting and Item 1.10 : Hull painting			
	2.1.4	Valve/sea chest mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			
	2.1.5	All studs, nuts and bolts to be cleaned and buffed.			
	2.1.6	Dismantle and refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary.			
	2.1.7	Valve parts too inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. [Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test.			



Dry Dock Specification– LAY UP

	2.1.8	Reassemble all valves with new joints and new gland packing.			
	2.1.9	Pressure test all sea valves on the gland side to 2 bar for a minimum 5 minutes. CMEO to witness tests. <i>[Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]</i>			
	2.1.10	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. <i>[Should any valves fail SAMSA inspection, further SAMSA costs to be borne by contractor]</i>			
	2.1.11	Refit valves using new KLINGER jointing and stainless steel nuts and bolts.			

2.2		OVERBOARD VALVES	unit		
		Main engines sea water overboard valve DN 100	ea	2	
		General Service pump overboard valve DN 80	ea	2	
		Black water overboard valve DN 100	ea	1	
		Oily water separator overboard valve DN 25	ea	1	
		Grey water overboard valve DN 50	ea	1	
		Galley overboard valve DN 50	ea	1	
		AC overboard valve DN 32	ea	1	
	2.2.1	Valves to be removed, dismantled for SAMSA inspection and refurbished. Machine, lapin/machine valve and seats as required. Machine new pins and renew rubber seats. New jointing and packing to be used. KLINGER Jointing between valve and ships side/sea chest to be used. Stainless steel bolts and nuts to be used. All valve and strainer insides to be painted with Apexior 3 or equivalent. All valve opening to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.			
	2.2.2	Remove overboard valves in entirety			
	2.2.3	All openings to be blanked off to stop ingress of shot blast/paint <i>[Ref Item 1.2 : Hull and Superstructure Grit Blasting and Item 1.10 : Hull painting]</i>			



Dry Dock Specification– LAY UP

	2.2.4	Valve/hull mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			
	2.2.5	All studs, nuts and bolts to be cleaned and buffed.			
	2.2.6	Dismantle and Refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary. Rubber to be renewed on none return flap valves.			
	2.2.7	Valve parts to be inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. [Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test. If any valve fail or are damage and need to be replaced, contractor must first supply us with a quote for replacing valve.			
	2.2.8	Reassemble all valves with new joints and new gland packing.			
	2.2.9	Pressure test all overboard valves on the water side to 2 bar for a minimum 5 minutes. CMEO to witness tests. <i>[Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]</i>			
	2.2.10	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. <i>[Should any valves fail SAMSA inspection, further SAMSA costs to be borne by contractor]</i>			
	2.2.11	Refit valves using new KLINGER jointing and stainless steel nuts and bolts and put copper slip.			
	2.2.12	During Flooding valves to be left in open position and checked for leaks and rectified if leaking by contractor.			

3.0		TANKS AND VOID SPACES	unit	Quantity	
		AFT PEAK BALLAST TANK	M ³	26.93	
		FORE PEAK BALLAST TANK	M ³	52.11	
		L.O TANKS PORT AND STARBOARD STORAGE	M ³	6	



Dry Dock Specification– LAY UP

		VOITH L.O STORAGE TANK STARBOARD	M ³	3	
	3.1.1	Contractors to open and reseal tanks using new neoprene jointing. Contractors to ensure that all tanks have a valid gas free certificate before entering. All tanks to be verified gas free on daily basis. Contractors to supply own ventilation fans. Any contractors not following safe working practices will be stopped from working. Tank plugs to be removed by ships staff. Low voltage lights to be used in the tanks and intrinsically safe tools to be used in the tanks. Rules for entering confined spaces to be adhered to.			
3.1		FRESH WATER TANK	M ³	43.02	
	3.1.2	Fresh water tank to be emptied.			
	3.1.3	Fresh water tank plugs to be removed			
	3.1.4	Plugs, male and female threads to be cleaned and inspected. New leather joints to be made.			
	3.1.5	Fresh water tank - covers to be removed			
	3.1.6	Fresh Water Tank - All studs, nuts and bolts to be cleaned and buffed.			
	3.1.7	Fresh water tank cover mating surfaces to be mechanically cleaned and prepared.			
	3.1.8	New Neoprene jointing to be supplied for tank covers			
	3.1.9	Gas free certificate to be issued for entry into Fresh Water Tank.			
	3.1.10	Fresh water tank to be high pressure water washed. Water to be removed and tanks dried.			
	3.1.11	Fresh water tank to be degreased and mechanically cleaned for inspection.			
	3.1.12	Fresh water tank to be inspected by ships staff and by Appointed Paint Representative			
	3.1.13	On approval fresh water tank to be painted as per Appointed Paint Representative. <i>[Allow 5 % coverage for quotation purposes]</i>			
	3.1.14	Fresh Water Tank plugs to be refitted with 3mm leather gasket (service provider to supply)			
	3.1.15	Final inspection by ships staff before tank covers are replaced.			
	3.1.16	Fresh water tank covers to be replaced. Ant seize paste to be used on all nuts and bolts.			



Dry Dock Specification– LAY UP

3.2		FUEL TANKS			
		Diesel Day tanks Port	M ³	5.11	
		Diesel Day tanks STBD	M ³	5.11	
		Fuel tank Port	M ³	67.49	
		Fuel Tank Starboard	M ³	67.49	
	3.2.1	Fuel Tanks to be emptied.			
	3.2.2	Fuel Tanks covers to be removed			
	3.2.3	Fuel Tanks All studs, nuts and bolts to be cleaned and buffed.			
	3.2.4	Fuel Tanks covers mating surfaces to be mechanically cleaned and prepared.			
	3.2.5	New oil resistant Vellumoid jointing to be supplied for Fuel Tanks covers.			
	3.2.6	Gas free certificate to be issued for before entry into Fuel Tanks and before SAMSA Inspection			
	3.2.7	Fuel Tank to be cleaned for SAMSA inspection			
	3.2.8	Fuel Tank to be inspected by ships staff			
	3.2.9	Fuel Tank inspection to be carried out by SAMSA <i>[New gas free certificate before entry to be supplied by contractor]</i>			
	3.2.10	Final inspection by ships staff before covers are replaced.			
	3.2.11	Fuel Double Bottom Tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

3.3		Void space	M ³	±40	
	3.3.1	Tanks to be emptied.			
	3.3.2	Tanks covers to be removed			
	3.3.3	Tanks All studs, nuts and bolts to be cleaned and buffed.			
	3.3.4	Tanks covers mating surfaces to be mechanically cleaned and prepared.			
	3.3.5	New neoprene jointing to be supplied for Tank covers.			
	3.3.6	Gas free certificate to be issued for before entry into Tanks			
	3.3.7	Tank to be cleaned for SAMSA inspection			
	3.3.8	Tanks to be inspected by ships staff			

Dry Dock Specification– LAY UP

	3.3.9	Tanks inspection to be carried out by SAMSA <i>[New gas free certificate before entry to be supplied by contractor]</i>			
	3.3.10	Final inspection by ships staff before covers are replaced.			
	3.3.11	Tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

3.4		Anchor chain lockers	m ³	4	
	3.4.1	Port and Stb'd chain lockers to be opened for inspection. High pressure washed and cleaned for SAMSA inspection. Touch-up paintwork as required. Gratings to be removed and refitted.			
	3.4.2	On completion of painting chain lockers, anchor chains to be brought back on-board.			
	3.4.3	Final inspection by ships staff before chain locker covers are replaced.			
	3.4.4	Anchor locker cover to be replaced. Anti-seize paste to be used on all nuts and bolts.			

3.5		FOAM TANK	M ³	13.59	
	3.5.1	Port and Starboard Foam Tanks to be emptied into external storage tanks. Contractor to supply tanks			
	3.5.2	Foam Tank - cover to be removed			
	3.5.3	Foam Tanks - All studs, nuts and bolts to be cleaned and buffed.			
	3.5.4	Foam Tanks covers mating surfaces to be mechanically cleaned and prepared.			
	3.5.5	New Neoprene jointing to be supplied for Fuel Day Tank covers.			
	3.5.6	Gas free certificate to be issued for entry into Port and Starboard Foam Tanks			
	3.5.7	Foam Tank to be degreased and mechanically cleaned for inspection.			
	3.5.8	Foam Tank to be inspected by ships staff and by Appointed Paint Representative			



Dry Dock Specification– LAY UP

	3.5.9	Foam Tank inspection by SAMSA <i>[New gas free certificate]</i>			
	3.5.10	On approval by SAMSA Port Foam Tank to be painted as per Appointed Paint Representative. <i>[Allow 5% coverage for quotation purposes]</i>			
	3.5.11	On approval by SAMSA Foam Tank to be painted as per Appointed Paint Representative. <i>[Allow 5% coverage for quotation purposes]</i>			
	3.5.12	Final inspection by ships staff before covers are replaced.			
	3.5.13	Foam Tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

3.6	3.6	DIRTY OIL TANK Contractor to pump out Dirty oil tank and provide disposal facility $\pm 2M^3$ and dispose of dirty oil and provide disposal certificate.	M ³	15.69	
	3.6.	Dirty oil tanks to be emptied			
	3.6.1	Remove all pipe work to open tank			
	3.6.2	Dirty oil tanks covers to be removed			
	3.6.3	Dirty oil tanks all studs, nuts and bolts to be cleaned and buffed.			
	3.6.4	Gas free certificate to be issued for before entry into oily water tank			
	3.6.5	Dirty oil tanks to be cleaned for SAMSA inspection			
	3.6.6	Dirty oil tanks to be inspected by ships staff			
	3.6.7	Dirty oil tanks inspection to be carried out by SAMSA <i>[New gas free certificate before entry to be supplied by contractor]</i>			
	3.6.8	Final inspection by ships staff before covers are replaced.			
	3.6.9	Dirty oil tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
	3.6.10	Dirty oil tanks replace neoprene gasket			
	3.6.11	Dirty oil tanks replace all pipe work on completion			



Dry Dock Specification– LAY UP

4.0		BILGE CLEANING	M ²	130	
		Bilge/ Sludge (Contractor to make provision for Disposal Facility and provide disposal certificate)			
	4.1	Shore Tank to be supplied			
	4.2	Bilges to be pumped out into shore tank [Contractor to supply tank. Pump and certified hose]			
	4.3	Contents of bilges to be disposed of legally			
	4.4	Certificate of disposal of bilge liquid to be supplied to the vessel. To include location of disposal and volume.			
	4.5	Deck plates to be removed and bilges cleaned.			
	4.6	Bilges to be degreased and wiped down.			
	4.7	All waste material in bilges to be removed and disposed of legally			
	4.8	Certificate of disposal of bilge waste to be supplied to vessel. To include location of disposal and volume.			

5.0		FIRE MONITOR			
	5.1	Hydraulic power pack to be isolated			
	5.2	All Rubber hydraulic hoses to be renewed			
	5.3	Fire monitor to be removed from Tug			
	5.4	Fire monitor to be dismantled			
	5.5	All seals to be renewed			
	5.6	All Hydraulic actuators to be overhauled			
	5.7	fire monitor to be painted after assembly			
	5.8	Test fire monitor when tug is out of the dock			
	5.9	All leaking hydraulic pipes to be renewed.			
	5.10	All bearings to be inspected, replaced as required and fit new grease nipples			

6.0		NDT THICKNESS TESTING			
	6.1.1	Conduct the following NDT in the following areas			

Dry Dock Specification– LAY UP

	6.1.2	NDT testing of the hull plating including propeller platform and sea chests			
	6.1.3	NDT testing of port and starboard void turntable and vertical sides			
	6.1.4	NDT of both port and starboard foam tanks internally			
	6.1.5	NDT Port and Starboard hawser pipes			
	6.1.6	NDT of main sea water cross over pipe			
	6.1.7	NDT of main deck and bridge deck			
	6.1.8	NDT of Port and Starboard anchor chains			
	6.1.9	Supply certificate of results prior to reflatting of vessel			

7.0		Pipe work, plating and fenders.			
	7.1.1	Erect safe access scaffolding to vessel			
	7.1.2	Arrange for hot work permit before hot work			
	7.1.3	Erect scaffolding on in accessible heights			
	7.1.4	Repair port side Quart fair lead			

8.0		Water			
	8.1.1	Supply water for blasting and cleaning			

		Waste			
9.0	9.1.1	Provide waste collection and disposal facilities			

10.0	10.1	SAMSA			
	10.1.1	SAMSA to inspect hull before painting			
	10.1.2	SAMSA to inspect sea and overboard valves			
	10.1.3	SAMSA to inspect tank + valve mating surfaces			
	10.1.4	SAMSA to inspect Voith Units			
	10.1.5	SAMSA to inspect hull prior to filling of dry-dock. Issue of new Dry-docking certificate.			

11.0	11.1	CHEMIST			
	11.1.1	CHEMIST to test and issue gas free certificates for tank entry and hot work permits.			

Dry Dock Specification– LAY UP

	11.1.2	Valid gas free certificate to be provided before when working on enclosed spaces and for SAMSA tank Inspections			
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12.0		DRYDOCK			
	12.1.1	Hire of shore cranes, cherry-pickers and hyster. Contractor to supply crane.			
	12.1.2	Arrange 380v 3 phase shore supply + extension cable			
	12.1.3	Arrange ablution facilities			
	12.1.4	Arrange fire main supply			
	12.1.5	Arrange divers for the docking day			

13.0	13.1.1	HOT WORK			
	13.1.2	Supply fire marshal			
	13.1.3	Supply hot work permit			
	13.1.4	Supply safety officer			

14.0		FENDERS			
	14.1.1	Remove and refit vertical fenders.			
	14.1.2	Renew fender locating pins as required.			
	14.1.3	Straighten fender locating pins as required.			
	14.1.4	Renew vertical fender palms as required.			
	14.1.5	Repairs to stern horizontal fender housing			
	14.1.6	Renew sausage fender tensioning screws			
	14.1.7	Renew Fender Straps			
	14.1.8	Renew Fender Straps Ratchet			
	14.1.9	Miscellaneous repairs to stern section.			
	14.1.10	Repair belting port and stb'd side.			
	14.1.11	Repairs to port and stb'd fender boxes.			
	14.1.12	Replace W shape damaged rubber fender stb'd quart aft			
	14.1.13	Mechanically clean fender housing, paint the space before fitting the fenders.			

15.0	15.1	KEEL COOLERS			
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Dry Dock Specification– LAY UP

	15.1.1	Remove , clean, pressure test and refit Keel Coolers (<i>repair where necessary</i>)	ea	2	
	15.1.2	Replace gasket (<i>Contractor to supply</i>)			

16.0	16.1	COOLERS			
	16.1.1	Open and clean HT Plate Coolers	ea	2	
	16.1.2	Open and Clean LT Coolers	ea	2	

17.0	17.1	TOWING WINCH			
	17.1.1	Ultrasonic cleaning of Hydraulic filter	ea	1	

18.0	18.1	MAIN ENGINE			
	18.1.1	Ultrasonic cleaning of Lube oil filters	ea	2	
	18.1.2	Ultrasonic cleaning of self-cleaning filter	ea	2	
	18.1.3	Remove and clean intercoolers	ea	2	

19.0	19.1	DIVERS			
	19.1.1	Provide divers during docking and undocking of craft	ea	2	

20.0	20.1	SEWAGE PLANT <i>(Contractor to make provision for Disposal Facility and provide disposal certificate)</i>	M ³	3.78	
	20.1.1	Isolate sewage plant			
	20.1.2	Pump out sewage plant to a collection facility			
	20.1.3	Vent Sewage plant and obtain gas free certificate			
	20.1.4	Clean Plant			
	20.1.5	Close up Sewage plant after cleaning.			

21.0	21.1	THICKNESS TEST			
	21.1.1	To do thickness testing as per SAMSA Requirement, plus or minus 80 points per vessel.			

22.0	22.1	WATERTIGHT APARTMENTS			
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Dry Dock Specification– LAY UP

	22.1.1	To clean all water tight doors rubber groves and fit new rubbers on potholes and water tight doors. Rubber to be supplied by contractor.			
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23.0	23.1	CATHODIC PROTECTION PROBE			
	23.1.1	Inspection of cathodic protection probes			

24.0	24.1	WHEELHOUSE SLIDING WINDOWS & SKY LIGHT			
	24.1.1	Remove wheelhouse sliding windows & sky light, treat corroded areas and refit with new seals			

WORKBOAT X 4

ITEM	SUB ITEM	DESCRIPTION	UNIT	QUANTITY	AMOUNT
1		EXTERNAL HULL CLEANING and PAINTING			
	1.1	HULL CLEANING			
	1.1.1	Scrape and high pressure water wash hull exterior Dispose of the barnacles.	M ²	305	

	1.2	HULL GRIT BLASTING <i>NOTE: All windows to be covered with hardboard before grit blasting</i>	M ²	305	
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Dry Dock Specification– LAY UP

	1.2.1	<i>(SA1 = Will remove lifting rust and paint. 1 nozzle/hour = 15 m²) (SA2.0 = Down to bare metal over 80% of hull). (SA2.5 = At least 95% of the surface shall be clean bare steel with at least 90% of any 25mm square clean bare steel. 1 nozzle/hour = 7 m²). All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry-dock and the legal disposal of such.</i>			
	1.2.2	<i>light wet Sweep blasting to SA 1 to be carried out on hull [It may be necessary to spot blast certain areas to SA2.5, allow 15% for this]</i>	M ²	305	
	1.2.3	<i>Wet spot grit blasting to SA 1 to be carried out on main deck, upper deck.[It may be necessary to blast certain areas to SA2.5, allow 15% for this]</i>	M2	166	
	1.2.3	<i>Wet spot grit blasting to SA 1 to be carried out on superstructure, including masts, hook, windlass and other fixtures. It may be necessary to blast certain areas to SA 2.5, allow 15% for this] [Contractors to ensure all glass areas are covered and protected against damage from shot blast] [Contractors to supply own certified scaffolding if required] [Copies of safety Certificates of any safety equipment to be available to the vessel for the duration of the dry-dock, this includes scaffolding, safety harness etc.] Water wash all sand blasted areas to remove all grit before painting</i>	M2	80	
	1.2.4	<i>Mechanically clean deck crane and prime cleaned areas note hydraulic hoses and seals not to be damaged</i>	EA	1	



Dry Dock Specification– LAY UP

	1.3	SEA CHESTS AND GRIDS			
	1.3.1	Remove ships intake grids (two in number).	ea	2	
	1.3.2	Mark grids for easy instillation	ea	2	
	1.3.3	Scrape and high pressure wash inside sea chests and sea chest grids.	ea	2	
	1.3.5	Damaged Intake Grid bolts and threads to be repaired and/or replaced. Broken bolt threads too be removed from holes. <i>[Bolts are stainless steel</i>	ea	10	
	1.3.6	Spray paint inside sea chests and grids as per hull specifications	M ²	50	
	1.3.7	Replace anodes inside sea chests	ea	2	
	1.3.8	Replace grids upon completion of painting <i>[Ref : Hull painting]</i>			
	1.3.9	All sea chest grid bolts to be rewired with stainless steel wire. <i>[Wire to be supplied by CONTRACTOR]</i>			
1.4	1.4	HULL PAINTING [On Completion of blasting and mechanically cleaning] NOTE: Paint specs requirements might change by paint specialist. Painters to follow specialist advise.			
	1.4.1	Apply a coat primer paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, sea chests, and hawser pipes.	M ²	305	



Dry Dock Specification– LAY UP

	1.4.2	Apply a coat key paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, sea chests, and hawser pipes.	M ²	305	
	1.4.3	Apply first anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes.	M ²	305	
	1.4.4	Apply second anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes.	M ²	305	
	1.4.5	Apply coat [black] as per appointed paint representatives instructions to hull exterior above waterline. To include hawser pipes, anchors.	M ²	166	
	1.4.6	Apply primer coat to prepared exposed areas on superstructure and all decks as per appointed paint representative's instructions.	M2	200	
	1.4.7	Apply final coat [white] as per appointed paint representatives instructions to complete superstructure, including mast.	M2	200	
	1.4.8	Paint vessel names, port of registration and draft marks In white			
	1.4.9	Apply final coat deck green as per appointed paint representative's instructions to all decks.	M2	170	
	1.4.10	Paint Deck crane after mechanically cleaning it and mark the safety working load	M2	90	



Dry Dock Specification– LAY UP

	1.4.11	Paint all decks with green paint as per manufacturer's specification and put non-slip sand on decks.	M2	166	
	1.4.12	Paint accommodation outside, including the superstructure, bridge and monkey Island.	M2	200	
	1.4.13	Paint all deck auxiliary equipment such as winches, cranes, anchor windlass and fit denzo tape on metal fittings.(established on site briefing)			

1.5		ANODES			
	1.5.1	All old anodes to be removed from hull, sea chests and rudder stocks before shot blasting and returned to vessel.	ea	32	
	1.5.2	All studs and threads to be cleaned [<i>16mm die nut</i>] and protected before shot blasting and painting commences. (<i>Suggest using garden hose pipe or strong tape to protect studs 16mm ID</i>)	ea.	64	
	1.5.3	Broken or damaged anode studs to be replaced [16mm]. contractor to make provision			
	1.5.4	Replace new anodes in sea chest, on hull and rudder stocks on completion of painting. [<i>Owner to supply anodes, washers and nuts</i>]	ea.	32	

1.6		ANCHORES AND CABLES			
	1.6.1	Range anchors	ea	1	
	1.6.2	Remark cable.	ea	1	

Dry Dock Specification– LAY UP

	1.6.3	<i>Wet grit blast anchors and cables.</i>	<i>ea</i>	1	
	1.6.4	<i>Remark cable.</i>	<i>ea</i>	1	
	1.6.5	<i>Coat cable with boiled linseed oil or equivalent.</i>	<i>ea</i>	1	

2	2.1	PROPULSION			
	2.1.1	Propellers to be cleaned and polished	ea	2	
	2.1.2	Cover Propeller from paint work	ea	2	
	2.1.3	Paint inside with APEXIOR No. 3 or equivalent.	ea	2	
	2.1.4	Propellers to be pulled out every four years. The following test have to be done under the presence of SAMSA Surveyor.	ea	2	
	2.1.5	Shafts straightness tests.	ea	2	
	2.1.6	Non Destructive testing to check for cracks.	ea	2	
	2.1.7	Blueing of the shaft and the propeller.	ea	2	
	2.1.8	When the shaft is assembled, stern tubes seals and white metal bearings to be fitted, specification will be provided by the owner.	ea	2	
	2.1.8	On the intermediate dry dock, shaft clearance to be taken and confirm if wear is still within limits	ea	2	

3.0		SHIPS VALVES			
	3.1	SHIPS SEA CHEST VALVES			



Dry Dock Specification– LAY UP

	3.1	<i>Port sea water inlet valve to strainer (butterfly valve) (DN 100)</i>	ea	1	
	3.1	<i>Stb'd sea water inlet valve to strainer (butterfly valve) (DN 100)</i>	ea	1	
	3.1.1	<i>Valves to be dismantled for SAMSA inspection and refurbished. Machine, lapin/machine valve and seats as required. New jointing and packing to be used. Jointing between valve and ships side/sea chest to be renewed after cleaning flanges. Stainless steel bolts and nuts to be used where mild steel are found. All valve and strainer insides to paint with Apexior 3 or equivalent. All valve openings to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.</i>			
	3.1.2	<i>Removed any pipe work to get to sea chest valves, and other valves</i>			
	3.1.3	Remove sea valves in entirety			
	3.1.4	All openings to be blanked off to stop ingress of shot blast/paint			
	3.1.5	Valve/sea chest mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			
	3.1.6	All studs, nuts and bolts to be cleaned and buffed.			



Dry Dock Specification– LAY UP

	3.1.7	Sea chest tops to be degreased, mechanically cleaned and painted with a suitable primer paint with a corrosion inhibitor and final top coat			
	3.1.8	Dismantle and refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary.			
	3.1.9	Valve parts too inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. [Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test.			
	3.1.10	Reassemble all valves with new joints and new gland packing.			
	3.1.11	Pressure test all sea valves on the gland side to 2 bar for a minimum 5 minutes. CMEO to witness tests. <i>[Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]</i>			
	3.1.12	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. <i>[Should any valves fail SAMSA inspection, further SAMSA costs to be born by contractor]</i>			
	3.1.13	Refit valves using new KLINGER jointing and stainless steel nuts and bolts.			

Dry Dock Specification– LAY UP

4.0	4.1	OVERBOARD VALVES			
	4.1	Overboard Fire line valve (65mm) SDNR Globe valve	ea	1	
	4.1	Bilge Overboard Valve (65mm) SDNR Globe valve	ea	1	
	4.1	Black Water and Grey water overboard valve(65mm) SDNR Globe valve	ea	1	
	4.1.1	Valves to be removed, dismantled for SAMSA inspection and refurbished. Machine, lap-in/machine valve and seats as required. Machine new pins and renew rubber seats. New jointing and packing to be used. KLINGER Jointing between valve and ships side/sea chest to be used. Stainless steel bolts and nuts to be used. All valve and strainer insides to paint with Apexior 3 or equivalent. All valve opening to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.			
	4.1.2	Remove overboard valves in entirety			
	4.1.3	All openings to be blanked off to stop ingress of shot blast/paint			
	4.1.4	Valve/hull mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			
	4.1.5	All studs, nuts and bolts to be cleaned and buffed.			

Dry Dock Specification– LAY UP

	4.1.6	Dismantle and Refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary. Rubber to be renewed on non-return flap valves.			
	4.1.7	Valve parts too inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. (Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test.)			
	4.1.8	<i>Any unforeseen repairs or valve renewal</i>			
	4.1.9	Reassemble all valves with new joints and new gland packing.			
	4.1.10	Pressure test all overboard valves on the water side to 2 bar for a minimum 5 minutes. TNPA representative to witness tests. <i>[Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]</i>			
	4.1.11	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. <i>[Should any valves fail SAMSA inspection, further SAMSA costs to be born by contractor]</i>			
	4.1.12	Refit valves using new KLINGER jointing and stainless steel nuts and bolts.			

Dry Dock Specification– LAY UP

	4.1.13	During Flooding valves to be left in open position and checked for leaks and rectified if leaking by contractor.			
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5.0		TANKS			
		Contractors to open and reseal tanks using new neoprene or Vellumoid jointing. Contractors to ensure that all tanks have a valid gas free certificate before entering. All tanks to be verified gas free on daily basis. Contractors to supply own ventilation fans. Any contractors not following safe working practices will be stopped from working. Tank plugs to be removed by ships staff. Low voltage lights to be used in the tanks and intrinsically safe tools to be used in the tanks. Rules for entering confined spaces to be adhered to			
5.1	5.1	FRESH WATER TANKS [Port and Starboard]	M ³	3.8	
	5.1.1	Fresh water tanks to be emptied.			
	5.1.2	fresh water tanks - covers to be removed			
	5.1.3	Fresh Water Tanks - All studs, nuts and bolts to be cleaned and buffed.			
	5.1.4	Fresh water tanks cover mating surfaces to be			
		Mechanically cleaned and prepared.			

Dry Dock Specification– LAY UP

	5.1.5	New Neoprene jointing to be supplied for tank covers			
	5.1.6	Gas free certificate to be issued for entry into Fresh Water Tank			
	5.1.7	Fresh water tank to be high pressure water washed. Water to be removed and tanks dried.			
	5.1.8	Fresh water tank to be degreased and mechanically cleaned for inspection.			
	5.1.9	fresh water tanks to be inspected by ships staff and by Appointed Paint Representative			
	5.1.10	On approval fresh water tank to be painted as per Appointed Paint Representative. <i>[Allow 20% coverage for quotation purposes]</i>			
	5.1.11	Final inspection by ships staff before tank covers are replaced.			
	6.1.12	Fresh water tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

5.2		FUEL TANKS: NOTE: Contractor to pump out fuel and provide storage facility ± 10M³			
		Fuel day tank Port	M ³	1.8	
		Fuel day tank-Starboard	M ³	1.8	
		Fuel Oil double bottom tank -No 1	M ³	9.4	



Dry Dock Specification– LAY UP

		Fuel Oil double bottom tank -No 2	M ³	9.4	
	5.2.1	Fuel tanks covers to be removed/opened			
	5.2.2	Fuel Tanks to be opened			
	5.2.3	Fuel Tanks All studs, nuts and bolts to be cleaned and buffed.			
	5.2.4	Fuel Tanks covers mating surfaces to be mechanically cleaned and prepared.			
	5.2.5	New oil resistant Vellumoid jointing to be supplied for Fuel Tanks covers.			
	5.2.6	Gas free certificate to be issued for before entry into Fuel Tanks			
	5.2.7	Fuel Tank to be cleaned for SAMSA inspection			
	5.2.8	Fuel Tank to be inspected by ships staff			
	5.2.9	Fuel Tank inspection to be carried out by SAMSA [<i>New gas free certificate before entry to be supplied by contractor</i>]			
	5.2.10	Final inspection by ships staff before covers are replaced.			
	5.2.11	Fuel Double Bottom and day Tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			



Dry Dock Specification– LAY UP

5.3		Grey /black water tank Contractor to pump out grey/black water and provide disposal facility ± 2M³ and dispose of grey/black water and provide disposal certificate.	M ³	0.7	
	5.3.1	Grey/black water tanks to be emptied.			
	5.3.2	Remove all pipe work to open tank			
	8.1.3	Grey/black water tanks covers to be removed			
	5.3.4	Grey/black water tanks All studs, nuts and bolts to be cleaned and buffed.			
	5.3.5	Gas free certificate to be issued for before entry into grey/black water tank			
	5.3.6	Grey/black water tanks to be cleaned for SAMSA inspection			
	8.1.7	Grey/black water tanks to be inspected by ships staff			
	5.3.8	Grey/black water tanks inspection to be carried out by SAMSA [<i>New gas free certificate before entry to be supplied by contractor</i>]			
	5.3.9	Final inspection by ships staff before covers are replaced.			
	5.3.10	Grey/black water tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
	5.3.11	Grey/black water tanks replace neoprene gasket			



Dry Dock Specification– LAY UP

	5.3.12	Grey/black water tanks replace all pipe work on completion			
5.4	5.4.1	DIRTY OIL TANK Contractor to pump out Dirty oil tank and provide disposal facility $\pm 2M^3$ and dispose of dirty oil and provide disposal certificate.	M ³	0.54	
	5.4.2	Dirty oil tanks to be emptied.			
	5.4.3	Remove all pipe work to open tank			
	5.4.4	Dirty oil tanks covers to be removed			
	5.4.5	Dirty oil tanks all studs, nuts and bolts to be cleaned and buffed.			
	5.4.6	Gas free certificate to be issued for before entry into oily water tank			
	5.4.7	Dirty oil tanks to be cleaned for SAMSA inspection			
	5.4.8	Dirty oil tanks to be inspected by ships staff			
	5.4.9	Dirty oil tanks inspection to be carried out by SAMSA <i>[New gas free certificate before entry to be supplied by contractor]</i>			
	5.4.10	Final inspection by ships staff before covers are replaced.			
	5.4.11	Dirty oil tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
	5.4.12	Dirty oil tanks replace neoprene gasket			
	5.4.13	Dirty oil tanks replace all pipe work on completion			

Dry Dock Specification– LAY UP

6.0	6.1	ANCHOR CHAIN LOCKERS	M ³	5	
	6.1.1	Chain lockers to be opened for inspection. High pressure washed and cleaned for SAMSA inspection. Touch-up paintwork as required. Gratings to be removed and refitted.			
	6.1.2	On completion of painting chain lockers, anchor chains to be brought back on-board.			
	6.1.3	Final inspection by ships staff before chain locker covers are replaced.			
	6.1.4	Anchor locker covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

7.0	7.1	PIPE WORK, FENDERS, SCAFFOLDING & STEEL WORK			
	7.1.1	Erect safe access scaffolding to vessel			
	7.1.2	Arrange for hot work permit before hot work			
	7.1.3	Erect scaffolding on in accessible heights			
	7.1.4	Contractor to make provision for steel work (500kg steel)			

8.0	8.1	WATER management			
	8.1.1	Supply water for blasting and cleaning			

9.0	9.1	WASTE management			
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Dry Dock Specification– LAY UP

	9.1.1	Provide waste collection and disposal facilities			
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10.0	10.1	SAMSA (TNPA + Contractor to agree on the specific dates) Contractor to book SAMSA surveys.			
	10.1.1	SAMSA to inspect hull before painting			
	10.1.2	SAMSA to inspect sea and overboard valves			
	10.1.3	SAMSA to inspect tank + valve mating surfaces			
	10.1.4	SAMSA to inspect propellers			
	10.1.5	SAMSA to inspect hull prior to filling of dry-dock. Issue of new Dry-docking certificate.			
	10.1.6	SAMSA to give guidance on Thickness testing requirements and shaft testing.			

11	11.1	CHEMIST			
	11.1.1	CHEMIST to test and issue gas free certificates for tank entry and hot work permits.			
	11.1.2	Valid gas free certificate to be provided before when working on enclosed spaces Valid gas free certificate for day of SAMSA inspections.			

12	12.1	DRYDOCK			
	12.1.1	Hire of shore cranes, cherry pickers and Hyster. Contractor to supply crane.			
	12.1.2	Arrange 380v 3 phase shore supply + extension cable			

Dry Dock Specification– LAY UP

	12.1.3	Arrange ablution facilities			
	12.1.4	Arrange fire main supply			
	12.1.5	Arrange divers for the docking day			
	12.1.6	Contractor to supply rigging equipment.			

13	13.1	HOT WORK			
	13.1.1	Supply fire marshal			
	13.1.2	Supply hot work permit			
	13.1.3	Supply safety officer			

14	14.1	FENDERS			
	14.1.1	Remove and refit horizontal fender.			
	14.1.2	Remove and refit vertical fenders.			
	14.1.3	Renew fender locating pins as required.			
	14.1.4	Straighten fender locating pins as required.			
	14.1.5	Renew vertical fender palms as required.			
	14.1.6	Repairs to stern horizontal fender housing.			
	14.1.7	Miscellaneous repairs to stern section.			
	14.1.8	Repair belting port and stb'd side.			
	14.1.8	Repairs to port and stb'd fender boxes.			

Dry Dock Specification– LAY UP

15	15.1	BILGES	M ²	60	
	15.1.1	Pump engine room bilges dry			
	15.1.2	Clean engine room bilges			
	15.1.3	Provide disposal certificate of the bilge water and sludge			
	15.1.4	Clean all areas contaminated by the bilge pumping process			

16		THICKNESS TESTING			
	16.1	To do thickness testing as per SAMSA Requirement, plus or minus 80 points per vessel.			
	16.2	Water tight doors and potholes			
	16.3	To clean all water tight doors rubber groves and fit new rubbers on potholes and water tight doors. Contractor to supply rubber material			

PILOT BOATS X 4					
ITEM	SUB ITEM	DESCRIPTION	UNIT	QUANTITY	AMOUNT
1		EXTERNAL HULL CLEANING and PAINTING			
	1.1	HULL CLEANING			
	1.1.1	Scrape and high pressure water wash hull exterior and superstructure. Dispose of the barnacles.	M2	305	

	1.2	HULL AND SUPERSTRUCTURE GRIT BLASTING NOTE: All windows to be covered with hardboard before grit blasting	M2	305	
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Dry Dock Specification– LAY UP

	1.2.1	<i>(SA1 = Will remove lifting rust and paint. 1 nozzle/hour = 15 m²) (SA2.0 = Down to bare metal over 80% of hull). (SA2.5 = At least 95% of the surface shall be clean bare steel with at least 90% of any 25mm square clean bare steel. 1 nozzle/hour = 7 m²). All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry-dock and the legal disposal of such.</i>			
	1.2.2	<i>light wet Sweep blasting to SA 1 to be carried out on hull [It may be necessary to spot blast certain areas to SA2.5, allow 15% for this]</i>	M2	305	
	1.2.3	<i>Wet spot grit blasting to SA 1 to be carried out on main deck, upper deck.[It may be necessary to blast certain areas to SA2.5, allow 15% for this]</i>	M2	166	
	1.2.4	<i>Wet spot grit blasting to SA 1 to be carried out on superstructure, including masts, hook, windlass and other fixtures. It may be necessary to blast certain areas to SA 2.5, allow 15% for this][Contractors to ensure all glass areas are covered and protected against damage from shot blast] [Contractors to supply own certified scaffolding if required][Copies of safety Certificates of any safety equipment to be available to the vessel for the duration of the dry-dock, this includes scaffolding, safety harness etc.] Water wash all sand blasted areas to remove all grit before painting</i>	M2	80	



Dry Dock Specification– LAY UP

	1.3	SEA CHESTS AND GRIDS			
	1.3.1	Remove ships intake grids (two in number).	EA	2	
	1.3.2	Mark grids for easy instillation	EA	2	
	1.3.3	Scrape and high pressure wash inside sea chests and sea chest grids.	EA	2	
	1.3.4	Damaged Intake Grid bolts and threads to be repaired and/or replaced. Broken bolt threads too be removed from holes. <i>[Bolts are stainless steel]</i>	EA	10	
	1.3.5	Spray paint inside sea chests and grids as per hull specifications	M2	50	
	1.3.6	Replace anodes inside sea chests	EA	2	
	1.3.7	Replace grids upon completion of painting <i>[Ref : Hull painting]</i>			
	1.3.8	All sea chest grid bolts to be rewired with stainless steel wire <i>[Wire to be supplied by CONTRACTOR]</i>			

	1.4	HULL PAINTING [On Completion of blasting and mechanically cleaning] NOTE: Paint specs requirements might change by paint specialist. Painters to follow specialist advise.			
	1.4.1	Apply a coat primer paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, sea chests, and hawser pipes.	M2	305	



Dry Dock Specification– LAY UP

	1.4.2	Apply a coat key paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, sea chests, and hawser pipes.	M2	305	
	1.4.3	Apply first anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes.	M ²	305	
	1.4.4	Apply second anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes.	M ²	305	
	1.4.5	Apply coat [black] as per appointed paint representatives instructions to hull exterior above waterline. To include hawser pipes, anchors.	M ²	166	
	1.4.6	Apply primer coat to prepared exposed areas on superstructure and all decks as per appointed paint representative's instructions.	M ²	200	
	1.4.7	Apply final coat [white] as per appointed paint representatives instructions to complete superstructure, including mast.	M ²	200	
	1.4.8	Paint vessel names, port of registration and draft marks In white. Port and stb'd side			
	1.4.9	Apply final coat deck green as per appointed paint representative's instructions to all decks.	M ²	170	



Dry Dock Specification– LAY UP

	1.4.10	Paint all decks with green paint as per manufacturer's specification and put non-slip sand on decks.	M ²	166	
	1.4.11	Paint accommodation outside, including the superstructure, bridge and monkey Island.	M2	200	
	1.4.12	Paint all deck auxiliary equipment such as winches, anchor windlass and fit denzo tape on metal fittings.(established on site briefing)			

	1.5	ANODES			
	1.5.1	All old anodes to be removed from hull, sea chests and rudder stocks before shot blasting and returned to vessel.	ea	18	
	1.5.2	All studs and threads to be cleaned [<i>16mm die nut</i>] and protected before shot blasting and painting commences. (<i>Suggest using garden hose pipe or strong tape to protect studs 16mm ID</i>)	ea	20	
	1.5.3	Broken or damaged anode studs to be replaced [16mm]. Contractor to make provision			
	1.5.4	Replace new anodes in sea chest, on hull and rudder stocks on completion of painting. [<i>Owner to supply anodes, washers and nuts</i>]	ea	18	

	1.6	ANCHORES AND CABLES			
	1.6.1	Range anchor	ea	1	
	1.6.2	Remark cable.	ea	1	



Dry Dock Specification– LAY UP

	1.6.3	<i>Wet grit blast anchors and cables and spare anchor.</i>	<i>ea</i>	2	
	1.6.4	<i>Remark cable.</i>	<i>ea</i>	1	
	1.6.5	<i>Coat cable with boiled linseed oil or equivalent.</i>	<i>ea</i>	1	

2	2.1	PROPULSION			
	2.1.1	Propellers to be cleaned and polished	ea	2	
	2.1.2	Cover Propeller from paint work	ea	2	
	2.1.3	Paint inside with APEXIOR No. 3 or equivalent.	ea	2	
	2.1.4	Propellers to be pulled out every four years. The following test have to be done under the presence of SAMSA Surveyor.	ea	2	
	2.1.5	Shafts straightness tests.	ea	2	
	2.1.6	Non Destructive testing to check for cracks.	ea	2	
	2.1.7	Blueing of the shaft and the propeller.	ea	2	
	2.1.8	When the shaft is assembled, stern tubes seals and white metal bearings to be fitted, specification will be provided by the owner.	ea	2	
	2.1.9	On the intermediate dry dock, shaft clearance to be taken and confirm if wear is still within limits	ea	2	



Dry Dock Specification– LAY UP

3.0		SHIPS VALVES			
	3.1	SHIPS SEA CHEST VALVES			
	3.1	Port sea water inlet valve to strainer (butterfly valve) (DN 200)	ea	1	
	3.1	Stb'd sea water inlet valve to strainer (butterfly valve) (DN 200)	ea	1	
	3.1.1	<i>Valves to be dismantled for SAMSA inspection and refurbished. Machine, lapin/machine valve and seats as required. New jointing and packing to be used. Jointing between valve and ships side/sea chest to be renewed after cleaning flanges. Stainless steel bolts and nuts to be used where mild steel are found. All valve and strainer insides to paint with Apexior 3 or equivalent. All valve openings to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.</i>			
	3.1.2	<i>Water manifold need to be removed to get to the sea chest valves, pipe work and other valves</i>			
	3.1.3	Remove sea valves in entirety			
	3.1.4	All openings to be blanked off to stop ingress of shot blast/paint			
	3.1.5	Valve/sea chest mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			
	3.1.6	All studs, nuts and bolts to be cleaned and buffed.			



Dry Dock Specification– LAY UP

	3.1.7	Sea chest tops to be degreased, mechanically cleaned and painted with a suitable primer paint with a corrosion inhibitor and final top coat			
	3.1.8	Dismantle and refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary.			
	3.1.9	Valve parts too inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. [Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test.			
	3.1.10	Reassemble all valves with new joints and new gland packing.			
	3.1.11	Pressure test all sea valves on the gland side to 2 bar for a minimum 5 minutes. CMEO to witness tests. <i>[Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]</i>			
	3.1.12	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. <i>[Should any valves fail SAMSA inspection, further SAMSA costs to be borne by contractor]</i>			
	3.1.13	Refit valves using new KLINGER jointing and stainless steel nuts and bolts.			

4.0		VALVES			
	4.1	OVERBOARD VALVES			
		Overboard Fire line valve (65mm) SDNR Globe valve	ea	1	
		Bilge Overboard Valve (40mm) SDNR Globe valve	ea	1	
		Black Water and Grey water overboard valve(40mm) SDNR Globe valve	ea	1	
		Port main engine sea water overboard valve(65mm) SDNR Globe valve	ea	1	



Dry Dock Specification– LAY UP

		Stb'd main engine sea water overboard valve(65mm) SDNR Globe valve	ea	1	
		Port generator sea water overboard valve(32mm) SDNR Globe valve	ea	1	
		Stb'd generator sea water overboard valve(32mm) SDNR Globe valve	ea	1	
		Oily water separator overboard valve(25mm) SDNR Globe valve	ea	1	
		Chain locker overboard valve (40mm) SDNR Globe valve	ea	1	
		Port Generator overboard valve NRN(DN100)	ea	1	
		Starboard Generator overboard valve NRN(DN100)	ea	1	
	4.1.1	Valves to be removed, dismantled for SAMSA inspection and refurbished. Machine, lap-in/machine valve and seats as required. Machine new pins and renew rubber seats. New jointing and packing to be used. KLINGER Jointing between valve and ships side/sea chest to be used. Stainless steel bolts and nuts to be used. All valve and strainer insides to paint with Apexior 3 or equivalent. All valve opening to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.			
	4.1.2	Remove overboard valves in entirety			
	4.1.3	All openings to be blanked off to stop ingress of shot blast/paint			
	4.1.4	Valve/hull mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			



Dry Dock Specification– LAY UP

	4.1.5	All studs, nuts and bolts to be cleaned and buffed.			
	4.1.6	Dismantle and Refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary. Rubber to be renewed on non-return flap valves.			
	4.1.7	Valve parts too inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. [Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test.			
	4.1.8	<i>Any unforeseen repairs or valve renewal</i>			
	4.1.9	Reassemble all valves with new joints and new gland packing.			
	4.1.10	Pressure test all overboard valves on the water side to 2 bar for a minimum 5 minutes. TNPA representative to witness tests. [Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]			
	4.1.11	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. [Should any valves fail SAMSA inspection, further SAMSA costs to be borne by contractor]			
	4.1.12	Refit valves using new KLINGER jointing and stainless steel nuts and bolts.			
	4.1.13	During Flooding valves to be left in open position and checked for leaks and rectified if leaking by contractor.			



Dry Dock Specification– LAY UP

5.0		TANKS			
		Contractors to open and reseal tanks using new neoprene or Vellumoid jointing. Contractors to ensure that all tanks have a valid gas free certificate before entering. All tanks to be verified gas free on daily basis. Contractors to supply own ventilation fans. Any contractors not following safe working practices will be stopped from working. Tank plugs to be removed by ships staff. Low voltage lights to be used in the tanks and intrinsically safe tools to be used in the tanks. Rules for entering confined spaces to be adhered to			
5.1		<i>FRESH WATER TANKS [Port and Starboard]</i>	<i>M³</i>	2.3	
	5.1.1	Fresh water tanks to be emptied.			
	5.1.2	Fresh water tanks - covers to be removed			
	5.1.3	Fresh Water Tanks - All studs, nuts and bolts to be cleaned and buffed.			
	5.1.4	Fresh water tanks cover mating surfaces to be mechanically cleaned and prepared.			



Dry Dock Specification– LAY UP

	5.1.5	New Neoprene jointing to be supplied for tank covers			
	5.1.6	Gas free certificate to be issued for entry into Fresh Water Tank			
	5.1.7	Fresh water tank to be high pressure water washed. Water to be removed and tanks dried.			
	5.1.8	Fresh water tank to be degreased and mechanically cleaned for inspection.			
	5.1.9	fresh water tanks to be inspected by ships staff and by Appointed Paint Representative			
	5.1.10	On approval fresh water tank to be painted as per Appointed Paint Representative. <i>[Allow 20% coverage for quotation purposes]</i>			
	5.1.11	Final inspection by ships staff before tank covers are replaced.			
	5.1.12	Fresh water tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

5.2		FUEL TANKS: NOTE: Contractor to pump out fuel and provide storage facility $\pm 10M^3$			
		Fuel day tank-Port day tank	M ³	1.3	
		Fuel day tank-Starboard day tank	M ³	1.3	
		Fuel Oil double bottom fuel tank -No 4	M ³	4.6	
		Fuel Oil double bottom fuel tank -No 6	M ³	6.7	
		Fuel Oil double bottom fuel tank -No 7	M ³	6.7	
	5.2.1	Fuel tanks covers to be removed/opened			



Dry Dock Specification– LAY UP

	5.2.2	Fuel Tanks to be opened			
	5.2.3	Fuel Tanks All studs, nuts and bolts to be cleaned and buffed.			
	5.2.4	Fuel Tanks covers mating surfaces to be mechanically cleaned and prepared.			
	5.2.5	New oil resistant Vellumoid jointing to be supplied for Fuel Tanks covers.			
	5.2.6	Gas free certificate to be issued for before entry into Fuel Tanks			
	5.2.7	Fuel Tank to be cleaned for SAMSA inspection			
	5.2.8	Fuel Tank to be inspected by ships staff			
	5.2.9	Fuel Tank inspection to be carried out by SAMSA [<i>New gas free certificate before entry to be supplied by contractor</i>]			
	5.2.10	Final inspection by ships staff before covers are replaced.			
	5.2.11	Fuel Double Bottom and day Tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

5.3		Grey /black water tank Contractor to pump out grey/black water and provide disposal facility ± 2M³ and dispose of grey/black water and provide disposal certificate.	M ³	1.83	
	5.3.1	Grey/black water tanks to be emptied.			
	5.3.2	Remove all pipe work to open tank			



Dry Dock Specification– LAY UP

	5.3.3	Grey/black water tanks covers to be removed			
	5.3.4	Grey/black water tanks All studs, nuts and bolts to be cleaned and buffed.			
	5.3.5	Gas free certificate to be issued for before entry into grey/black water tank			
	5.3.6	Grey/black water tanks to be cleaned for SAMSA inspection			
	5.3.7	Grey/black water tanks to be inspected by ships staff			
	5.3.8	Grey/black water tanks inspection to be carried out by SAMSA [<i>New gas free certificate before entry to be supplied by contractor</i>]			
	5.3.9	Final inspection by ships staff before covers are replaced.			
	5.3.10	Grey/black water tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
	5.3.11	Grey/black water tanks replace neoprene gasket			
	5.3.12	Grey/black water tanks replace all pipe work on completion			

5.4		DIRTY OIL TANK Contractor to pump out Dirty oil tank and provide disposal facility ± 2M³ and dispose of dirty oil and provide disposal certificate.	M ³	1.265	
	5.4.1	Dirty oil tanks to be emptied.			
	5.4.2	Remove all pipe work to open tank			
	5.4.3	Dirty oil tanks covers to be removed			

Dry Dock Specification– LAY UP

	5.4.4	Dirty oil tanks all studs, nuts and bolts to be cleaned and buffed.			
	5.4.5	Gas free certificate to be issued for before entry into oily water tank			
	5.4.6	Dirty oil tanks to be cleaned for SAMSA inspection			
	5.4.7	Dirty oil tanks to be inspected by ships staff			
	5.4.8	Dirty oil tanks inspection to be carried out by SAMSA <i>[New gas free certificate before entry to be supplied by contractor]</i>			
	5.4.9	Final inspection by ships staff before covers are replaced.			
	5.4.10	Dirty oil tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
	5.4.11	Dirty oil tanks replace neoprene gasket			
	5.4.12	Dirty oil tanks replace all pipe work on completion			

6.0	6.1	ANCHOR CHAIN LOCKERS	M ³	5	
	6.1.1	Chain lockers to be opened for inspection. High pressure washed and cleaned for SAMSA inspection. Touch-up paintwork as required. Gratings to be removed and refitted.			
	6.1.2	On completion of painting chain lockers, anchor chains to be brought back on-board.			
	6.1.3	Final inspection by ships staff before chain locker covers is replaced.			

Dry Dock Specification– LAY UP

	6.1.4	Anchor locker covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
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7.0	7.1	PIPE WORK, FENDERS, SCAFFOLDING & STEEL WORK			
	7.1.1	Erect safe access scaffolding to vessel.			
	7.1.2	Arrange for hot work permit before hot work			
	7.1.3	Erect scaffolding on in accessible heights			
	7.1.4	Contractor to make provision for steel work (500kg steel)			

8.0	8.1	WATER management			
	8.1.1	Supply water for blasting and cleaning			

9.0	9.1	WASTE management			
	9.1.1	Provide waste collection and disposal facilities.			

10.0	10.1	SAMSA (TNPA + Contractor to agree on the specific dates) Contractor to book surveys with SAMSA.			
	10.1.1	SAMSA to inspect hull before painting			
	10.1.2	SAMSA to inspect sea and overboard valves			
	10.1.3	SAMSA to inspect tank + valve mating surfaces			
	10.1.4	SAMSA to inspect propellers			

Dry Dock Specification– LAY UP

	10.1.5	SAMSA to inspect hull prior to filling of dry-dock. Issue of new Dry-docking certificate.			
	10.1.6	SAMSA to give guidance on Thickness testing requirements and shaft testing.			

11.0	11.1	CHEMIST			
	11.1.1	CHEMIST to test and issue gas free certificates for tank entry and hot work permits.			
	11.1.2	Valid gas free certificate to be provided before when working on enclosed spaces Valid gas free certificate for day of SAMSA inspections.			

12	12.1	DRYDOCK			
	12.1.1	Hire of shore cranes, cherry pickers and Hyster. Contractor to supply crane.			
	12.1.2	Arrange 380v 3 phase shore supply + extension cable			
	12.1.3	Arrange ablution facilities			
	12.1.4	Arrange fire main supply			
	12.1.5	Arrange divers for the docking day			
	12.1.6	Contractor to supply rigging equipment.			

13	13.1	HOT WORK			
	13.1.1	Supply fire marshal			
	13.1.2	Supply hot work permit			
	13.1.3	Supply safety officer			

Dry Dock Specification– LAY UP

14	14.1	FENDERS			
	14.1.1	Remove and refit horizontal fender.			
	14.1.2	Remove and refit vertical fenders.			
	14.1.3	Renew fender locating pins as required.			
	14.1.4	Straighten fender locating pins as required.			
	14.1.5	Renew vertical fender palms as required.			
	14.1.6	Repairs to stern horizontal fender housing.			
	14.1.7	Miscellaneous repairs to stern section.			
	14.1.8	Repair belting port and stb'd side.			
	14.1.9	Repairs to port and stb'd fender boxes.			

15	15.1	BILGES	M ²	60	
	15.1.1	Pump engine room bilges dry			
	15.1.2	Clean engine room bilges			
	15.1.3	Provide disposal certificate of the bilge water and sludge			
	15.1.4	Clean all areas contaminated by the bilge pumping process			

16	16.1	THICKNESS TESTING			
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Dry Dock Specification– LAY UP

	16.1.1	To do thickness testing as per SAMSA Requirement, plus or minus 80 points per vessel.			
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17	17.1	WATERTIGHT APARTMENTS			
	17.1.2	Water tight doors and potholes			
	17.1.3	To clean all water tight doors rubber groves and fit new rubbers on potholes and water tight doors. Contractor to supply rubber material.			

LAUNCHES X 3					
ITEM	SUB ITEM	DESCRIPTION	UNIT	QUANTITY	AMOUNT
1		EXTERNAL HULL CLEANING and PAINTING			
	1.1	HULL CLEANING			
	1.1.1	Scrape and high pressure water wash hull exterior Dispose of the barnacles.	M ²	305	

	1.2	HULL GRIT BLASTING NOTE: All windows to be covered with hardboard before grit blasting	M ²	305	
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Dry Dock Specification– LAY UP

	1.2.1	<i>(SA1 = Will remove lifting rust and paint. 1 nozzle/hour = 15 m²) (SA2.0 = Down to bare metal over 80% of hull). (SA2.5 = At least 95% of the surface shall be clean bare steel with at least 90% of any 25mm square clean bare steel. 1 nozzle/hour = 7 m²). All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry-dock and the legal disposal of such.</i>			
	1.2.2	<i>light wet Sweep blasting to SA 1 to be carried out on hull [It may be necessary to spot blast certain areas to SA2.5, allow 15% for this]</i>	M ²	305	
	1.2.3	<i>Wet spot grit blasting to SA 1 to be carried out on main deck, upper deck.[It may be necessary to blast certain areas to SA2.5, allow 15% for this]</i>	M2	166	
	1.2.3	<i>Wet spot grit blasting to SA 1 to be carried out on superstructure, including masts, hook, windlass and other fixtures. It may be necessary to blast certain areas to SA 2.5, allow 15% for this] [Contractors to ensure all glass areas are covered and protected against damage from shot blast] [Contractors to supply own certified scaffolding if required] [Copies of safety Certificates of any safety equipment to be available to the vessel for the duration of the dry-dock, this includes scaffolding, safety harness etc.] Water wash all sand blasted areas to remove all grit before painting</i>	M2	80	
	1.2.4	<i>Mechanically clean deck crane and prime cleaned areas note hydraulic hoses and seals not to be damaged</i>	EA	1	



Dry Dock Specification– LAY UP

	1.3	SEA CHESTS AND GRIDS			
	1.3.1	Remove ships intake grids (two in number).	ea	2	
	1.3.2	Mark grids for easy instillation	ea	2	
	1.3.3	Scrape and high pressure wash inside sea chests and sea chest grids.	ea	2	
	1.3.5	Damaged Intake Grid bolts and threads to be repaired and/or replaced. Broken bolt threads too be removed from holes. <i>[Bolts are stainless steel</i>	ea	10	
	1.3.6	Spray paint inside sea chests and grids as per hull specifications	M ²	50	
	1.3.7	Replace anodes inside sea chests	ea	2	
	1.3.8	Replace grids upon completion of painting <i>[Ref : Hull painting]</i>			
	1.3.9	All sea chest grid bolts to be rewired with stainless steel wire. <i>[Wire to be supplied by CONTRACTOR]</i>			
1.4	1.4	HULL PAINTING <i>[On Completion of blasting and mechanically cleaning]</i> NOTE: Paint specs requirements might change by paint specialist. Painters to follow specialist advise.			
	1.4.1	Apply a coat primer paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, sea chests, and hawser pipes.	M ²	305	



Dry Dock Specification– LAY UP

	1.4.2	Apply a coat key paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, sea chests, and hawser pipes.	M ²	305	
	1.4.3	Apply first anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes.	M ²	305	
	1.4.4	Apply second anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes.	M ²	305	
	1.4.5	Apply coat [black] as per appointed paint representatives instructions to hull exterior above waterline. To include hawser pipes, anchors.	M ²	166	
	1.4.6	Apply primer coat to prepared exposed areas on superstructure and all decks as per appointed paint representative's instructions.	M2	200	
	1.4.7	Apply final coat [white] as per appointed paint representatives instructions to complete superstructure, including mast.	M2	200	
	1.4.8	Paint vessel names, port of registration and draft marks In white			
	1.4.9	Apply final coat deck green as per appointed paint representative's instructions to all decks.	M2	170	
	1.4.10	Paint Deck crane after mechanically cleaning it and mark the safety working load	M2	90	



Dry Dock Specification– LAY UP

	1.4.11	Paint all decks with green paint as per manufacturer's specification and put non-slip sand on decks.	M2	166	
	1.4.12	Paint accommodation outside, including the superstructure, bridge and monkey Island.	M2	200	
	1.4.13	Paint all deck auxiliary equipment such as winches, cranes, anchor windlass and fit denzo tape on metal fittings.(established on site briefing)			

1.5		ANODES			
	1.5.1	All old anodes to be removed from hull, sea chests and rudder stocks before shot blasting and returned to vessel.	ea	32	
	1.5.2	All studs and threads to be cleaned [<i>16mm die nut</i>] and protected before shot blasting and painting commences. (<i>Suggest using garden hose pipe or strong tape to protect studs 16mm ID</i>)	ea.	64	
	1.5.3	Broken or damaged anode studs to be replaced [16mm]. contractor to make provision			
	1.5.4	Replace new anodes in sea chest, on hull and rudder stocks on completion of painting. [<i>Owner to supply anodes, washers and nuts</i>]	ea.	32	

1.6		ANCHORES AND CABLES			
	1.6.1	Range anchors	ea	1	
	1.6.2	Remark cable.	ea	1	

Dry Dock Specification– LAY UP

	1.6.3	<i>Wet grit blast anchors and cables.</i>	<i>ea</i>	1	
	1.6.4	<i>Remark cable.</i>	<i>ea</i>	1	
	1.6.5	<i>Coat cable with boiled linseed oil or equivalent.</i>	<i>ea</i>	1	

2	2.1	PROPULSION			
	2.1.1	Propellers to be cleaned and polished	ea	2	
	2.1.2	Cover Propeller from paint work	ea	2	
	2.1.3	Paint inside with APEXIOR No. 3 or equivalent.	ea	2	
	2.1.4	Propellers to be pulled out every four years. The following test have to be done under the presence of SAMSA Surveyor.	ea	2	
	2.1.5	Shafts straightness tests.	ea	2	
	2.1.6	Non Destructive testing to check for cracks.	ea	2	
	2.1.7	Blueing of the shaft and the propeller.	ea	2	
	2.1.8	When the shaft is assembled, stern tubes seals and white metal bearings to be fitted, specification will be provided by the owner.	ea	2	
	2.1.8	On the intermediate dry dock, shaft clearance to be taken and confirm if wear is still within limits	ea	2	

3.0		SHIPS VALVES			
	3.1	SHIPS SEA CHEST VALVES			



Dry Dock Specification– LAY UP

	3.1	<i>Port sea water inlet valve to strainer (butterfly valve) (DN 100)</i>	ea	1	
	3.1	<i>Stb'd sea water inlet valve to strainer (butterfly valve) (DN 100)</i>	ea	1	
	3.1.1	<i>Valves to be dismantled for SAMSA inspection and refurbished. Machine, lapin/machine valve and seats as required. New jointing and packing to be used. Jointing between valve and ships side/sea chest to be renewed after cleaning flanges. Stainless steel bolts and nuts to be used where mild steel are found. All valve and strainer insides to paint with Apexior 3 or equivalent. All valve openings to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.</i>			
	3.1.2	<i>Removed any pipe work to get to sea chest valves, and other valves</i>			
	3.1.3	Remove sea valves in entirety			
	3.1.4	All openings to be blanked off to stop ingress of shot blast/paint			
	3.1.5	Valve/sea chest mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			
	3.1.6	All studs, nuts and bolts to be cleaned and buffed.			
	3.1.7	Sea chest tops to be degreased, mechanically cleaned and painted with a suitable primer paint with a corrosion inhibitor and final top coat			



Dry Dock Specification– LAY UP

	3.1.8	Dismantle and refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary.			
	3.1.9	Valve parts to be inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. [Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test.			
	3.1.10	Reassemble all valves with new joints and new gland packing.			
	3.1.11	Pressure test all sea valves on the gland side to 2 bar for a minimum 5 minutes. CMEO to witness tests. <i>[Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]</i>			
	3.1.12	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. <i>[Should any valves fail SAMSA inspection, further SAMSA costs to be born by contractor]</i>			
	3.1.13	Refit valves using new KLINGER jointing and stainless steel nuts and bolts.			

4.0	4.1	OVERBOARD VALVES			
	4.1	Overboard Fire line valve (65mm) SDNR Globe valve	ea	1	

Dry Dock Specification– LAY UP

	4.1	Bilge Overboard Valve (65mm) SDNR Globe valve	ea	1	
	4.1	Black Water and Grey water overboard valve(65mm) SDNR Globe valve	ea	1	
	4.1.1	Valves to be removed, dismantled for SAMSA inspection and refurbished. Machine, lap-in/machine valve and seats as required. Machine new pins and renew rubber seats. New jointing and packing to be used. KLINGER Jointing between valve and ships side/sea chest to be used. Stainless steel bolts and nuts to be used. All valve and strainer insides to paint with Apexior 3 or equivalent. All valve opening to exterior to be blanked off to stop ingress of shot blast and paint. All mating surfaces, studs and nuts to be examined for signs of corrosion.			
	4.1.2	Remove overboard valves in entirety			
	4.1.3	All openings to be blanked off to stop ingress of shot blast/paint			
	4.1.4	Valve/hull mating surfaces to be cleaned, prepared and inspected for damage and/or corrosion.			
	4.1.5	All studs, nuts and bolts to be cleaned and buffed.			
	4.1.6	Dismantle and Refurbish valves, including cleaning and painting, lapping-in valve seats/disks or machining same where necessary. Rubber to be renewed on non-return flap valves.			



Dry Dock Specification– LAY UP

	4.1.7	Valve parts too inspected by vessel CMEO before assembly. Valve bodies, valve spindles, valve disks and seats to be inspected for damage and all valve spindle threads checked. Condition of gland followers and gland studs to be inspected. (Confirm with SAMSA surveyor if he wants a visual inspection of valves before assembly and value/time of pressure test.)			
	4.1.8	<i>Any unforeseen repairs or valve renewal</i>			
	4.1.9	Reassemble all valves with new joints and new gland packing.			
	4.1.10	Pressure test all overboard valves on the water side to 2 bar for a minimum 5 minutes. TNPA representative to witness tests. <i>[Valves should be closed by hand and then "nipped up" for the pressure test. Over tightened valves will not be accepted]</i>			
	4.1.11	On satisfactory completion of pressure test, valves to be presented to SAMSA surveyor for inspection. <i>[Should any valves fail SAMSA inspection, further SAMSA costs to be born by contractor]</i>			
	4.1.12	Refit valves using new KLINGER jointing and stainless steel nuts and bolts.			
	4.1.13	During Flooding valves to be left in open position and checked for leaks and rectified if leaking by contractor.			

5.0		TANKS			
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Dry Dock Specification– LAY UP

		Contractors to open and reseal tanks using new neoprene or Vellumoid jointing. Contractors to ensure that all tanks have a valid gas free certificate before entering. All tanks to be verified gas free on daily basis. Contractors to supply own ventilation fans. Any contractors not following safe working practices will be stopped from working. Tank plugs to be removed by ships staff. Low voltage lights to be used in the tanks and intrinsically safe tools to be used in the tanks. Rules for entering confined spaces to be adhered to			
5.1	5.1	<i>FRESH WATER TANKS [Port and Starboard]</i>	M ³	3.8	
	5.1.1	Fresh water tanks to be emptied.			
	5.1.2	fresh water tanks - covers to be removed			
	5.1.3	Fresh Water Tanks - All studs, nuts and bolts to be cleaned and buffed.			
	5.1.4	Fresh water tanks cover mating surfaces to be			
		Mechanically cleaned and prepared.			
	5.1.5	New Neoprene jointing to be supplied for tank covers			
	5.1.6	Gas free certificate to be issued for entry into Fresh Water Tank			
	5.1.7	Fresh water tank to be high pressure water washed. Water to be removed and tanks dried.			



Dry Dock Specification– LAY UP

	5.1.8	Fresh water tank to be degreased and mechanically cleaned for inspection.			
	5.1.9	fresh water tanks to be inspected by ships staff and by Appointed Paint Representative			
	5.1.10	On approval fresh water tank to be painted as per Appointed Paint Representative. <i>[Allow 20% coverage for quotation purposes]</i>			
	5.1.11	Final inspection by ships staff before tank covers are replaced.			
	6.1.12	Fresh water tank covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

5.2		FUEL TANKS: NOTE: Contractor to pump out fuel and provide storage facility $\pm 10M^3$			
		Fuel day tank Port	M ³	1.8	
		Fuel day tank-Starboard	M ³	1.8	
		Fuel Oil double bottom tank -No 1	M ³	9.4	
		Fuel Oil double bottom tank -No 2	M ³	9.4	
	5.2.1	Fuel tanks covers to be removed/opened			
	5.2.2	Fuel Tanks to be opened			
	5.2.3	Fuel Tanks All studs, nuts and bolts to be cleaned and buffed.			



Dry Dock Specification– LAY UP

	5.2.4	Fuel Tanks covers mating surfaces to be mechanically cleaned and prepared.			
	5.2.5	New oil resistant Vellumoid jointing to be supplied for Fuel Tanks covers.			
	5.2.6	Gas free certificate to be issued for before entry into Fuel Tanks			
	5.2.7	Fuel Tank to be cleaned for SAMSA inspection			
	5.2.8	Fuel Tank to be inspected by ships staff			
	5.2.9	Fuel Tank inspection to be carried out by SAMSA [<i>New gas free certificate before entry to be supplied by contractor</i>]			
	5.2.10	Final inspection by ships staff before covers are replaced.			
	5.2.11	Fuel Double Bottom and day Tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
5.3		Grey /black water tank Contractor to pump out grey/black water and provide disposal facility $\pm 2M^3$ and dispose of grey/black water and provide disposal certificate.	M ³	0.7	
	5.3.1	Grey/black water tanks to be emptied.			
	5.3.2	Remove all pipe work to open tank			
	8.1.3	Grey/black water tanks covers to be removed			



Dry Dock Specification– LAY UP

	5.3.4	Grey/black water tanks All studs, nuts and bolts to be cleaned and buffed.			
	5.3.5	Gas free certificate to be issued for before entry into grey/black water tank			
	5.3.6	Grey/black water tanks to be cleaned for SAMSA inspection			
	8.1.7	Grey/black water tanks to be inspected by ships staff			
	5.3.8	Grey/black water tanks inspection to be carried out by SAMSA [<i>New gas free certificate before entry to be supplied by contractor</i>]			
	5.3.9	Final inspection by ships staff before covers are replaced.			
	5.3.10	Grey/black water tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
	5.3.11	Grey/black water tanks replace neoprene gasket			
	5.3.12	Grey/black water tanks replace all pipe work on completion			

5.4	5.4.1	DIRTY OIL TANK Contractor to pump out Dirty oil tank and provide disposal facility ± 2M³ and dispose of dirty oil and provide disposal certificate.	M ³	0.54	
	5.4.2	Dirty oil tanks to be emptied.			
	5.4.3	Remove all pipe work to open tank			
	5.4.4	Dirty oil tanks covers to be removed			



Dry Dock Specification– LAY UP

	5.4.5	Dirty oil tanks all studs, nuts and bolts to be cleaned and buffed.			
	5.4.6	Gas free certificate to be issued for before entry into oily water tank			
	5.4.7	Dirty oil tanks to be cleaned for SAMSA inspection			
	5.4.8	Dirty oil tanks to be inspected by ships staff			
	5.4.9	Dirty oil tanks inspection to be carried out by SAMSA <i>[New gas free certificate before entry to be supplied by contractor]</i>			
	5.4.10	Final inspection by ships staff before covers are replaced.			
	5.4.11	Dirty oil tanks covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			
	5.4.12	Dirty oil tanks replace neoprene gasket			
	5.4.13	Dirty oil tanks replace all pipe work on completion			

6.0	6.1	ANCHOR CHAIN LOCKERS	M ³	5	
	6.1.1	Chain lockers to be opened for inspection. High pressure washed and cleaned for SAMSA inspection. Touch-up paintwork as required. Gratings to be removed and refitted.			
	6.1.2	On completion of painting chain lockers, anchor chains to be brought back on-board.			



Dry Dock Specification– LAY UP

	6.1.3	Final inspection by ships staff before chain locker covers are replaced.			
	6.1.4	Anchor locker covers to be replaced. Anti-seize paste to be used on all nuts and bolts.			

7.0	7.1	PIPE WORK, FENDERS, SCAFFOLDING & STEEL WORK			
	7.1.1	Erect safe access scaffolding to vessel			
	7.1.2	Arrange for hot work permit before hot work			
	7.1.3	Erect scaffolding on in accessible heights			
	7.1.4	Contractor to make provision for steel work (500kg steel)			

8.0	8.1	WATER management			
	8.1.1	Supply water for blasting and cleaning			

9.0	9.1	WASTE management			
	9.1.1	Provide waste collection and disposal facilities			

10.0	10.1	SAMSA (TNPA + Contractor to agree on the specific dates) Contractor to book SAMSA surveys.			
	10.1.1	SAMSA to inspect hull before painting			
	10.1.2	SAMSA to inspect sea and overboard valves			

Dry Dock Specification– LAY UP

	10.1.3	SAMSA to inspect tank + valve mating surfaces			
	10.1.4	SAMSA to inspect propellers			
	10.1.5	SAMSA to inspect hull prior to filling of dry-dock. Issue of new Dry-docking certificate.			
	10.1.6	SAMSA to give guidance on Thickness testing requirements and shaft testing.			

11	11.1	CHEMIST			
	11.1.1	CHEMIST to test and issue gas free certificates for tank entry and hot work permits.			
	11.1.2	Valid gas free certificate to be provided before when working on enclosed spaces Valid gas free certificate for day of SAMSA inspections.			

12	12.1	DRYDOCK			
	12.1.1	Hire of shore cranes, cherry pickers and Hyster. Contractor to supply crane.			
	12.1.2	Arrange 380v 3 phase shore supply + extension cable			
	12.1.3	Arrange ablution facilities			
	12.1.4	Arrange fire main supply			
	12.1.5	Arrange divers for the docking day			
	12.1.6	Contractor to supply rigging equipment.			

13	13.1	HOT WORK			
	13.1.1	Supply fire marshal			

Dry Dock Specification– LAY UP

	13.1.2	Supply hot work permit			
	13.1.3	Supply safety officer			

14	14.1	FENDERS			
	14.1.1	Remove and refit horizontal fender.			
	14.1.2	Remove and refit vertical fenders.			
	14.1.3	Renew fender locating pins as required.			
	14.1.4	Straighten fender locating pins as required.			
	14.1.5	Renew vertical fender palms as required.			
	14.1.6	Repairs to stern horizontal fender housing.			
	14.1.7	Miscellaneous repairs to stern section.			
	14.1.8	Repair belting port and stb'd side.			
	14.1.8	Repairs to port and stb'd fender boxes.			

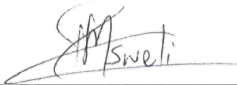
15	15.1	BILGES	M ²	60	
	15.1.1	Pump engine room bilges dry			
	15.1.2	Clean engine room bilges			
	15.1.3	Provide disposal certificate of the bilge water and sludge			
	15.1.4	Clean all areas contaminated by the bilge pumping process			

16		THICKNESS TESTING			
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Dry Dock Specification– LAY UP

	16.1	To do thickness testing as per SAMSA Requirement, plus or minus 80 points per vessel.			
	16.2	Water tight doors and potholes			
	16.3	To clean all water tight doors rubber groves and fit new rubbers on potholes and water tight doors. Contractor to supply rubber material			

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