TRANSPETRO

PORT INFORMATION

Terminal NORTE CAPIXABA

3rd Edition

2022

REVISIONS & AMENDMENT CONTROL

EDITION	REVISION	AMENDMENTS	DATE	PREPARATION	APPROVAL
3 rd.	A	Phone updates.	12/12/2022	**Helder** Martins	Felipe José Silveira **Lapa**
3 rd.	A	Update of the positioning of the single point moorings.	12/12/2022	**Helder** Martins	Felipe José Silveira **Lapa**
3 rd.	B	Update of the length of floatable cargo hose line	28/03/2023	**Helder** Martins	Felipe José Silveira **Lapa**
3 rd.	C	Update of the maximum length from Bow to center manifold	03/10/2023	**Helder** Martins	Felipe José Silveira **Lapa**
3 rd.	D	Update of Deadweight of the Terminal	30/11/2023	**Helder** Martins	Felipe José Silveira **Lapa**

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INTRODUCTION

This Port Information is prepared by Petrobras Transportes S.A. (Transpetro) which operates the North Capixaba Terminal – TNC. It provides essential information for ships operating in the Terminal. It is distributed internally in the organization; to the port stakeholders; to all ships aiming to operate in it; as well as to the local and national authority.

The Port Information of TNC has versions in Portuguese and English.

The information contained in this publication is intended to supplement, never replace or alter any type of legislation, instructions, guidance, or official, national, or international publications. Therefore, it should not be taken into account what contravenes any item of the aforementioned documents. Thus, it is emphasized to ships that intend to operate in this Terminal, that the knowledge of the Port Information of the TNC does not exempt users from knowing the provisions of the applicable Legislation/Regulation, as well as those provided for in the applicable International Conventions ratified by Brazil.

It may be necessary to completely disregard the information contained in this document, when this procedure is indispensable for avoiding immediate danger or operational risk, and the commander cannot be released from his full responsibility for the maneuver he makes through claiming fulfillment or guidance from the information presented in this document.

It must consider the dangers to navigation and of collision with the port facilities or other vessels operating in the vicinity, as well as the limitations of the vessels involved.

The Terminal reserves the right to change any of its operational particulars set forth herein, without prior notice.

It should be noted that Transpetro will gladly receive suggestions, corrections or recommendations regarding the matters dealt with. Therefore, if wrong information is found that needs to be updated, please contact:

Sectorial Management of the North Capixaba Maritime Terminal
Rua Campo Grande Nativo, s/n – Km 8, Barra Nova - São Mateus/ES - Zip Code: 29.944-370
Phone: (27) 3194-4202
Route: 740-4202

Management of the Waterway Terminals of Espírito Santo
Rodovia ES 010, s/n - Km 60, Barra do Riacho/ES – Zip Code: 29.197-554.
Phone: (27) 3194-4153
Route: 740-4153

The most recent version of this TNC Port Information can be obtained through the following electronic address:

https://transpetro.com.br/en_us/transpetro-institucional/business-areas/terminals-and-pipelines/port-informations.htm

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DEFINITIONS

- **AID TO NAVIGATION -** Set of all the visual, audio, and radio-electric resources for use of the navigator, with the purpose of enabling them to recognize their position;
- **BP (**Bollard Pull) – Longitudinal static traction;
- **BUNKER** – Maritime fuel for ships;
- **CALM** (Catenary Anchor Leg Mooring) - Anchoring system and installation of the monobuoy / submarine oversleeve set;
- **MOORING MASTER** – Professional with a bachelor's degree in Nautical Sciences, with training as a Nautical Officer, who assists the Master of the tanker (NT) during the approach, mooring/unberthing maneuvers and, at the discretion of the Terminal, the transfer of oil and its derivatives;
- **COW** (Crude Oil Washing) - cleaning of the ship's loading tanks with the product carried by the ship;
- **ERC** – Emergency Response Center;
- **SQUAT EFFECT -** Increased draught of a ship as a result of increased travel speed;
- **BEAUFORT SCALE-** Scale that measures wind intensity from the state of the sea;
- **ETA** (Estimated Time of Arrival) – Estimated time of arrival;
- **GIAONT** – Ship / Terminal Operational Inspection and Monitoring Group;
- **HAWSER** – Term used to designate a cable used in the mooring of ships in the monobuoy;
- **IMO –** International Maritime Organization;
- **ISGOTT** – International Safety Guide for Oil Tankers and Terminals;
- **ISPS CODE** – International Ship and Port Facility Security Code;
- **LVSO –** Operational Safety Checklist (ISGOTT);
- **MANIFOLD –** Set of load outlets and valves, located at midship, where the arms and oversleeves are connected for loading or unloading operation;
- **NT** – Tanker;
- **OCIMF (Oil Companies International Marine Forum);**
- **PEI -** Individual Emergency Plan;
- **DEADWEIGHT:** Difference between the weight of the ship with the maximum authorized loading and the weight of the light ship. This difference, which can be expressed in metric tons, corresponds to the weight of the loading, passengers and their luggage, fuel and lubricants, water and food;
- **ERP -** Emergency Response Plan;
- **PLEM (Pipe Line End Manifold) –** Set of valves and pipelines at the end of the subsea pipeline;
- **SLOP** – Waste tank;
- **SOLAS** – Safety of Life at Sea – International Convention for the Safety of Life at Sea;
- **SPM** (Single Point Mooring) – monobuoy or single mooring point;
- **TPB** - Gross Tonnage.
- **VHF** (Very High Frequency) – Radio frequency used in maritime operations;
- **VTS** (Vessel Traffic Service) – Traffic service for the vessel;

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CHARTS AND REFERENCE DOCUMENTS

3.1 – CHARTS

Information about the Terminal can be obtained from the following publications:

AREA	TYPE OF CHART NUMBER		
	Brazil (DHN)	US Hydrographic Office	British Admiralty
Anchoring and Approach to Port	22,800		
Entrance to the Port and Channels	22,800		
Terminal and Approach Area	22,800		

3.2 – OTHER PUBLICATIONS

In addition to the information contained in the aforementioned Charts, other information and data about the Terminal can be obtained from the documents below:

NPCP-ES - Standards and Procedures of the Capitania dos Portos do Espírito Santo	Maritime Authority – Capitania dos Portos do Espírito Santo - CPES
NORMAM – Maritime Authority Standards	Maritime Authority – Capitania dos Portos do Espírito Santo - CPES
Roadmap – East Coast	Directorate of Hydrography and Navigation - DHN
Lighthouse List	Directorate of Hydrography and Navigation - DHN

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DOCUMENTS AND EXCHANGES OF INFORMATION

The table below shows who is responsible for preparing each of the documents; to whom they should be delivered; and the type of document:

INFORMATION	ELABORATED BY:			DELIVERED TO:			COMMENTS
	Terminal	Ship	Both	Terminal	Ship	Both	
Prior to Arrival							
Estimated Arrival (ETA) and Vessel Information		X		X			According to Appendix B
Basic information about the Terminal and the operation	X				X		According to Appendix C
Before transfer of loading							
Details of loading, slop and ballast on board.		X		X			According to Appendix B
Essential information for the operation	X				X		According to Appendix C
Ship / Shore Safety Checklist			X			X	According to ISGOTT
During loading transfer							
Repeat the Ship/Shore Safety Checklist			X			X	According to ISGOTT
After loading transfer, before ship departure							
Information required for unberthing the ship			X			X	Quantity of fuel and water on board
After unberthing, on leaving the port							
Information related to the port departure data		X		X			Disembarkation time of the Maneuvering Captain and departure from the Port

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DESCRIPTION OF THE PORT OR ANCHORAGE

5.1 – GENERAL DESCRIPTION

The operation system of the Norte Capixaba Terminal (TNC) consists of a monobuoy (SPM - Single Point Mooring), installed on the high seas, which characterizes it as an Oceanic Terminal.

The monobuoy is installed in a place not sheltered, being considered a Private Port, located 90 nautical miles north from the area of the Organized Port of Vitória - ES.

5 .2 - LOCATION – APPENDIX A

5.2.1 - COORDINATES

The monobuoy is installed at the following coordinates:

MONOBUOY	LATITUDE	LONGITUDE
SBM III	**18° 58’ 41’’S**	**039° 42’ 22’’ W**

5.2.2 – GENERAL GEOGRAPHIC LOCATION

The TNC is located 67 km from the city center of São Mateus, 102 km from the city of Linhares, 246 km from the city of Vitória and 30 km from the Alegre Farm Station, located on the Brazilian east coast, in the north of the state of Espírito Santo, 77 km north of the breadth of the Doce River and 2.7 km south of Barra Nova.

It is located 48 miles north of the breadth of the Doce River, 1.7 miles south of the city of Barra Nova, and approximately 60 miles from the Barra do Riacho Terminal, Transpetro's closest operational support base. The Terminal was built on the site called Campo Grande de Barra Nova, on the island of Campo Grande, in the municipality of São Mateus/ES.

Its facilities are located at the following address:

PETROBRAS TRANSPORTE S.A. - TRANSPETRO
NORTH CAPIXABA MARITIME TERMINAL
Rua Campo Grande Nativo, s/n° - km 08
Barra Nova - São Mateus, Espírito Santo – Brazil Zip Code: 29.944-370.

5.3 – TERMINAL APPROACHES

5.3.1 - GENERAL description

Being a monobuoy in the open sea, the TNC may be demanded by both the North and the South. The choice of approach direction depends on the resulting sea and wind forces interacting with the ship.

For the initial approach, in order to board, the Mooring Master and his team, the ship may use the Suçuruaca Lighthouse as a reference (*See item 5.3.3*).

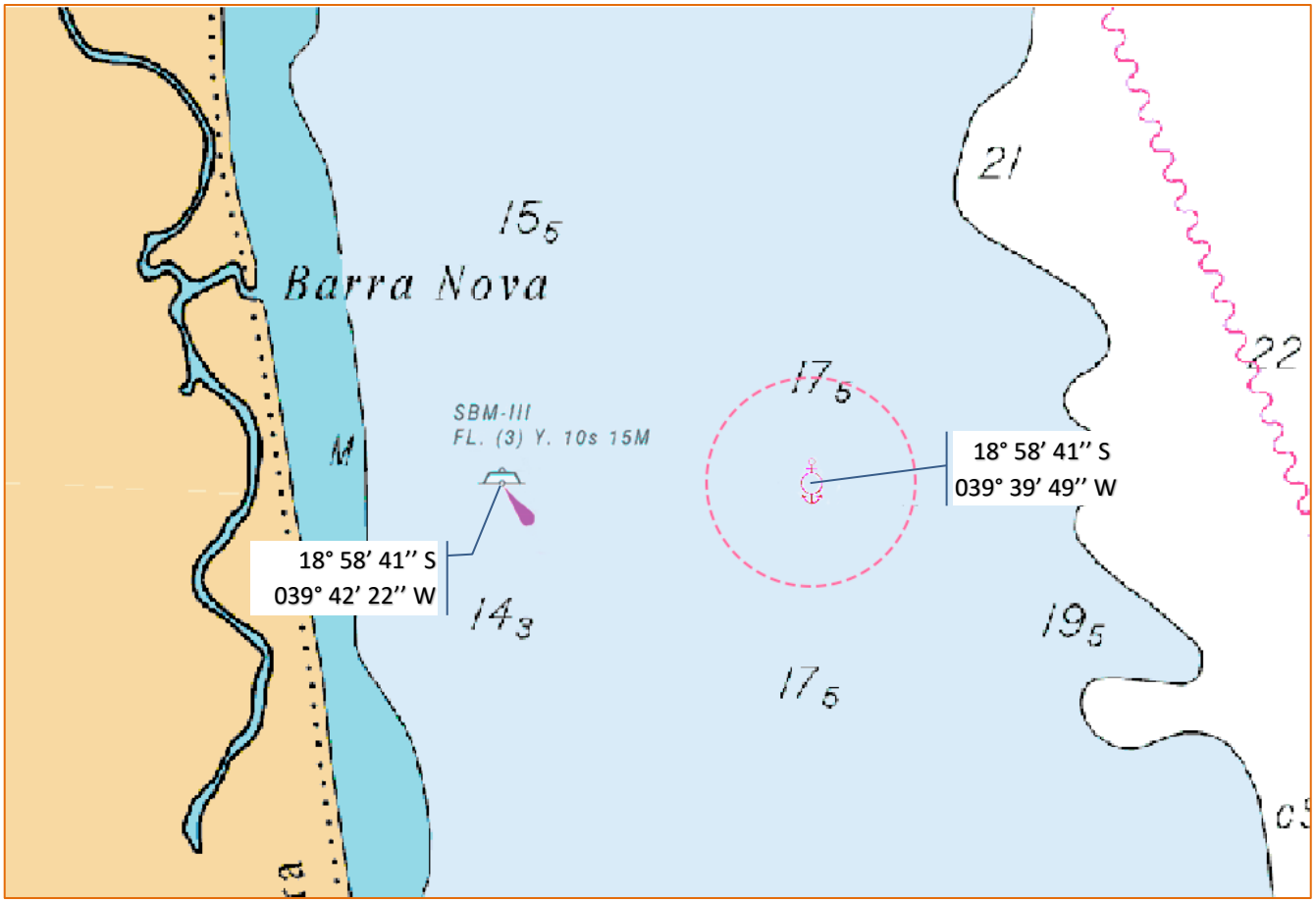
Ships intending to operate on the TNC must have a maximum Gross Size of 80,000 TPB; maximum draft of 12 meters; and a maximum allowed distance between the bow and the ship's manifold of 119 meters.

5.3.2 – ANCHORAGE

The recommended anchorage to wait for dawn or wait for orders, is east of the monobuoy, in a circle of 1 nautical mile of radius, whose center is at the following coordinates:

- Center: Latitude: 18° 58’ 41’’ S and Latitude: 039° 39’ 49’’ W;
- Depth: 16 m;
- Nature of the background: Sand/Mud;

NOTE**:** It is forbidden to anchor between the monobuoy and the coast (270°), as there are underwater pipelines connecting the SBM III monobuoy to the Terminal, as well as hydraulic umbilicals.



5.3.3 - AIDS TO NAVIGATION

As aids to navigation of ships intended to operate in the Terminal, the following can be mentioned:

- **São Mateus Lighthouse**

  - Order No.: 1852;

  - Position: Lat.: 18° 36.86´S // Long.: 039° 43.88´W;

- **Barra Nova - SBMIII**

  - Order No.: 1853;

  - Position: Latitude: 18° 58.67' S // Longitude: 039° 42.37' W;

- **Lighthouse of Suçuraca**

  - Order No.: 1854;

  - Position: Lat.: 19°05,80S – Long.: 039°43,38W

NOTE: More detailed particulars of the headlights and other brands should be consulted in the publication in force of the Lista de Faróis - Diretoria de Hidrografia e Navegação (DHN) – Brazilian Navy.

5.3.4 – PORT LIMITS

There are no official limits set for the Port. The Terminal is situated on the open sea, in unsheltered waters.

5.3.5 – PORT CONTROL OR VTS

There is no Port Control or VTS of the Maritime Authority, in the locality of the monobuoy of the Norte Capixaba Maritime Terminal.

Ships must inform, upon their arrival at the TNC port, the Operations Control Center (CCO), through VHF radio (channels 10/16), in accordance with international radio procedures, for purposes to receive instructions.

5.3.6 – PILOTAGE

There is no provision of Pilotage service at the North Capixaba Terminal (TNC).

The mooring and unmooring maneuvers of the ships are carried out by a duly qualified Mooring Master/Loading Master, who offers the ship's Masters his knowledge and experience about the place, guiding on the approach, mooring and unmooring maneuvers, coordinating the connection and disconnection operations of hoses, and assisting them throughout the stay of the ship.

It should be noted, however, that each Ship's Master is solely responsible for the maneuvers and for providing the information to be provided to the Mooring Master. Thus, it is up to the Ship's Master to inform any peculiarities, specific conditions or existing difficulties, such as machinery deficiency, boilers, problems or malfunctions of aids to navigation, mooring/unmooring, mooring cables or any element that may lead to danger with regard to the operation, safety of the ship and the Terminal facilities.

The use of the services of the Mooring Master is mandatory for all ships that intend to operate in the North Capixaba Terminal (TNC).

The Mooring Master and the mooring team will embark, to carry out the mooring maneuver, at a point close to the anchorage area, guided by him when he embarks on the ship.

The Mooring Master and mooring team will remain on board throughout the loading operation until the ship leaves the monobuoy.

5.3.7 - TUGBOATS AND PORT SERVICES

The TNC provides for the operation the following tugboats and mooring boats:

- A tugboat of about 45 T of static traction to assist in maneuvers. At the discretion of the Mooring Master and the Ship's Master, after the vessel has been moored to the monobuoy, the tugboat may carry out the pull-back operation with the ship. This differential factor aims to improve operational safety, ensuring the Ship's Master and their crew the necessary conditions for the success of the operation.
- During the entire operation, the Terminal will also provide an Oil Recovery Vessel for monitoring and emergency response;
- In addition to these, the Terminal has a mooring boat, for assistance services in mooring/unmooring maneuvers and connection/disconnection of hoses.

NOTE: There is no availability of additional tugboats and/or speedboats to transport personnel or material, except when in response to emergency contingencies and by management decision.

There are no other services in the TNC monobuoy area.

5.3.8 – NAVIGATION RISKS

Constant traffic of pushers carrying barges between the Portocel Terminals in Aracruz/ES, to the Belmonte/BA and Caravelas/BA Terminals.

NOTE**:** It is forbidden to anchor between the monobuoy and the coast (270°), as there are underwater pipelines connecting the SBM III monobuoy to the Terminal, as well as hydraulic umbilicals.

5.3.9 - GENERAL RESTRICTIONS

The operational limits established for embarkation and disembarkation, mooring and unmooring, as well as for operational continuity, were defined based on knowledge of local particulars and experience acquired.

In the TNC facilities, mooring in the monobuoy is only allowed in daylight.

The unmooring maneuver of this can occur without time restriction.

The environmental limits for mooring are defined in Petrobras Standard N-2562.

The Mooring Master and Operations Supervisor will be responsible for monitoring operation and environmental conditions.

In the steps of approach and mooring, it will be up to the Mooring Master to define the continuity or interruption of the maneuver, based on environmental limits.

In turn, in the transfer stage, the Mooring Master and Operations Supervisor will be responsible for defining operational continuity or discontinuity.

Approach and mooring maneuvers should only be carried out if the intensity of the environmental conditions are within the limits established in table 1, below:

LIMITS FOR MOORING SHIPS		TNC
ACTIVITY	DESCRIPTION	LIMITS
NOCTURNAL APPROACH AND MOORING	WIND (KNOTS)	N/A
	VISIBILITY (NAUTICAL MILES)	N/A
DAYTIME APPROACH AND MOORING	WIND (KNOTS)	≤ 25
	VISIBILITY (NAUTICAL MILES)	≥ 0,5

Table 1: Operational Limits – Steps of approach, mooring and unmooring of ships

For the transfer step, the intensity limits of the meteoceanographic and traction conditions in the mooring line are evaluated as established in table 2, below:

LIMITS FOR OFF SHORE OPERATION		TNC
ACTIVITY	DESCRIPTION	LIMITS
ALERT FOR MOBILIZATION OF THE TEAM ON BOARD (STEP 1)	WIND (KNOTS)	25
	CABLE TRACTION (Tons)	N/A
PUMPING INTERRUPTION/PREPARATION FOR DISCONNECTION (STEP 2)	WIND (KNOTS)	30
	CABLE TRACTION (Tons)	N/A
DISCONNECTION/UNMOORING (STEP 3)	WIND (KNOTS)	35
	CABLE TRACTION (Tons)	N/A

Table 2: Operational Limits – Transfer Steps

If the limit indicated in STEP 1 of Table 2 - wind speed is reached during the transfer of products, the Mooring Master must immediately alert the support teams to prepare for possible interruption of the operation. At this stage, the ship's machinery readiness must be requested from the vessel's Master.

If the limit indicated in STEP 2 of Table 2 – wind speed is reached during product transfer, the Mooring Master must immediately stop pumping and start preparations for disconnecting the hoses. In this stage, of pumping interruption and preparation for disconnection, the readiness of the ship's machine must be confirmed by the ship's Captain; the support teams (Ship/Terminal) must be ready; and the support vessels (Terminal) must be activated to start the ready disconnection.

Similarly, if the limit indicated in STEP 3 of Table 2 – wind speed is reached, the Mooring Master, after stopping the pumping, must immediately request the disconnection of the hoses and then arrange for the unmooring and exit of the Ship.

The support vessel should only operate if the intensity of the environmental condition is lower than the limit established in the following table.

LIMITS FOR SUPPORT OPERATIONS		TNC
ACTIVITY	DESCRIPTION	LIMITS
OPERATION	WIND (KNOTS)	≤ 35

Table 3: Operational Limit – Operations with Support Vessels

NOTE: For the evaluation of the operational limits present in tables 1, 2 and 3, the average value of the wind speed must be used for an interval of 01(one) minute.

Wave and current conditions must be analyzed by the Mooring Master to assess the feasibility of carrying out the approach, mooring, transfer or operation of the support vessels in a safe and controlled manner.

The Mooring Master must be proactive in relation to the observation of weather conditions, previously stopping the approach, mooring or transfer maneuver, in case of signs of environmental changes that, in his judgment, may put the operation at risk.

During the transfer stage, the Mooring Master may interrupt operations, even with parameters lower than those described, if, in his analysis, he finds that the continuation of operations will endanger the facilities, the Ship, the crews, support teams and/or the environment.

The Mooring Master, the Operations Supervisor and the Operation Manager must jointly evaluate the alternatives for conducting the operation in a safe manner. Among other factors, those described below should be evaluated:

- Visual monitoring of the tension state of the mooring cable;
- Visual monitoring of the sea state (waves ≥ 3.0m);
- Monitoring of the local wind using the ship's anemometers;
- Periodic communication Operations Control Center (OCC) on the parameters monitored in the field.

It will be up to the Operation Manager, the authorization to carry out the operation in the condition of exceptionality described, after applying the additional measures resulting from the evaluation carried out.

5.4 - MANEUVERING AREA

The basin of evolution in the approach of the mooring berths extends 360° around the monobuoy, about 0.8 miles. The depths in the region vary between bathymetric dimensions of 10 to 20 meters.

Important: Due to the uniformity of the coast, ships that demand the Terminal should plot their positions again and again, especially at night. Maneuvers in the evolution basin are safe. When heading to the anchorage, ships must maintain contact, in accordance with international radio procedures, with the Terminal Operations Control Center (CCO), through VHF radio (channels 10/16), to receive instructions.

5.4.1 – AIDS TO NAVIGATION AND BERTHING

Not applicable

5.4.2 – DEPTH CONTROL

The depth of the monobuoy region, as well as the maximum operating draft of the ships are as follows:

MONOBUOY	DEPTH	MAXIMUM DRAFT
SBM III	16 meters	12 meters

5.4.3 - MAXIMUM DIMENSIONS

The Gross Size of the vessels (Deadweight or TPB) for mooring in SBM III monobuoy is 80,000 tons.

In view of the need to connect the floating hoses, the maximum distance allowed between the bow and the ship's center manifold (LBCM) must be 119 meters for vessels intending to operate on the TNC.

5.5 - ENVIRONMENTAL FACTORS

The climate of the Brazilian coast in this region is well marked by the existence of two predominant seasons: rainy summers and dry winter and with mild temperatures. The average annual temperature is around 26°C.

In winter, weather conditions along the coast are influenced by the passage of cold fronts associated with low-pressure zones every 15 days on average. These depressions are characterized by strong winds from the South/Southeast or South/Southwest quadrant. Winds with forces ranging from 6 to 10 on the Beaufort scale.

In spring, the sea prevails calm in coastal waters, with little influence from sea and land breezes. Typical winter conditions vary rapidly during the season and can cause bad weather.

Summer is marked by specific climatic conditions, with a predominance of North/Northeast winds, with medium intensity, little wave formation along the coast and days with high temperatures. The state of the sea is little influenced by the passage of winds from the South/Southeast quadrant.

In autumn, calm seas predominate in coastal waters. Sea and land breezes are minimal. The passage of typical winter disturbances grows slowly in frequency during this season and can cause short periods of bad weather, in April and especially in May, in the conditions described for winter.

Fog is a relatively rare phenomenon in the region. When it occurs on land (on the coastline) it can hide nautical signals used as a reference for landing.

5.5.1 – PREVAILING WINDS

In the coastal region of the North Capixaba ~~Maritime~~ Terminal (TNC), the prevailing winds come from the North and Northeast directions.

5.5.2 - WAVES AND SAVES

For the TNC, the waves are mainly from the East with variations for the Northeast and Southeast.

In the winter months, on the occasion of cold fronts, there is a wave formation from the South and Southwest with amplitudes that exceed 3 meters, which can make it impossible to operate vessels and diving routines in the TNC.

5.5.3 - RAINFALL

The predominant is sparse and short rains, with severe and long rains being rare.

5.5.4 – LIGHTNING STORM

Such storms are not common, but may occur when cold front passing through.

5.5.5 - VISIBILITY

Visibility limitation is rare and may occur during showers or on unusual occasions of fog.

5.5.6 – TIDAL CURRENTS AND OTHER CURRENTS

The currents in the TNC are well defined, being the predominant direction between South and Southwest, with a smaller portion between North and Northeast.

5.5.7 – VARIATION OF TIDE LEVELS

The maximum variation between high and low tide is 2 m. The average variation is approximately 1.5 m. The tide table for the TNC is that of the DHN, corresponding to Barra Nova (ES).

There may also be variations in the direction and intensity of the current due to tidal changes.

5.5.8 – AVERAGE TEMPERATURE

The average annual temperature is around 26°C.

5.5.8 – MEASUREMENTS

The North Capixaba Terminal does not have a meteoceanographic station. The TNC carried out the monitoring of weather conditions through bulletins received daily, from a specialized company contracted for this purpose.

The density of seawater in the Terminal monobuoy region is 1,025 g/cm^3.

6

DESCRIPTION OF THE TERMINAL

6.1 - OVERVIEW

Located on the beach of Campo Grande, on the island of the same name, in the municipality of São Mateus/ES, south of the village of Barra Nova, the North Capixaba Terminal (TNC) is at a distance of about 215 km from the capital Vitória/ES.

The distance from the nearest landing support point (Barra do Riacho/ES) is located at 60 miles of navigation, since the region in the vicinity of the monobuoy does not have sufficient depth for landing the support vessels.

It is operated by Petrobras Transporte S.A. - Transpetro.

The monobuoy installed in the TNC serves as an Ocean Terminal for mooring ships intended for the transport of oil from the land and sea fields of the North of Espírito Santo.

6.2 – PHYSICAL DETAILS OF THE BERTH

The Monobuoy is fixed by 7 anchoring lines, in a water depth of 16 m, connected to a PLEM (Pipe Line End Manifold), and which receives the earth oil through rigid pipelines.

The PLEM connection to the monobuoy is made by means of two lines of flexible submarine hoses, in a compliant configuration called “Chinese Lantern”.

Particulars of the Monobuoy – SBM-III	
Body diameter	10.00 m
Body Height	4.35 m
Monobuoy Draft	3.50 m
Skirt Diameter	13.50 m
Distance from MB Center to *Chain Stoppers*	5.50 m
Chain Stoppers Height	0.50 m

The anchoring system of the monobuoy consists of 7 rows of 3” by 272m moorings, using as attachment point to the bottom anchors Stevpris of Vryhof of 15 t. The general particulars of this, are as shown in the table below:

Particulars of Anchorage System

Number of Moorings	7
Angle between moorings	45º
Mooring Length	304 m
Top angle of the chain	30º (with horizontal)
Anchor Radius	~300 m
Weight in Air	126.5 kg/m
Weight in Water	106.7 kg/m
Type of moorings	76mm R4, with stud

The project anchoring board is as shown in the table below:

Line	Azimuth (°)	Anchor Radius [m]	Pre-Traction (kN)	Angle at Top [°]	Latitude	Longitude
1	25	301,7	100	29,4	18° 58.53' S	039° 42.30' W
2	70	301,7	100	29,4	18° 58.62' S	039° 42.22' W
3	115	301,7	100	29,4	18° 58.74' S	039° 42.22' W
4	160	301,7	100	29,4	18° 58.82' S	039° 42.32' W
5	205	301,7	100	29,4	18° 58.81' S	039° 42.44' W
6	295	301,7	100	29,4	18° 58.63' S	039° 42.52' W
7	340	301,7	100	29,4	18° 58.53' S	039° 42.43' W

6.3 – MOORING ARRANGEMENTS

The ships operating in the TNC are tied by a single floating cable, 21 inches in circumference, with a length of 90 meters, consisting of 100% polyamide material, double braid coated and complemented with accessories necessary for the handling and mooring of the ships.

Berth	Requires Pilot Maneuvering	Deadwheigth (DWG)	Bollard-Pull - Tugboat		Approach < 500m		Mooring Cables (HAWSER)
			Mooring	Unmooring	Speed (máx)	Angle (máx)	
SPM	Yes (*1)	80.000	45T	45T	1,5 knots	N/A	1

NOTE: (*1) - Maneuver performed by the Terminal Mooring Master

6.4 - PARTICULARS OF THE BERTH FOR LOADING AND UNLOADING

Berth	Produtos	Número e DiÂmetro dos Braços	Receive or Send	Temperature		Maximum Flow Rate (m^3 / h)	Máximo Pressure
				Mínimum	Máximum		
SPM	Petroleum	1 x 16"	Send	20º	65º C	1.600	7,0 Kgf/cm^2

The TNC monobuoy system has the following particulars:

- FLOATING HOSES: An electrically discontinuous line, formed by a set of 26 hoses - having 10,668m each hose, of double carcass, with diameters of 16 and 20 inches, forming a line of hoses with a total length of 277,3 m.

- SUBMARINE HOSES: Two lines formed by two sets of two electrically discontinuous, 16 inch diameter, double carcass submarine 'hoses, mounted with floats and in the Chinese Lantern (CALM) type conformation – Appendix D.

– SUBSEA MANIFOLD (PLEM): The PLEM is formed by four ball valves of 300 pounds and 16 inches in diameter. Two valves have mechanical-hydraulic activation. Two valves have mechanical activation, one of these valves interconnects the pipelines and the other interconnects the subsea hose lines. The manifold is mounted on a skid on the seabed.

- SUBSEA PIPELINES – MONOBUOY / TERMINAL: Composed of two lines (North/South) in carbon steel, diameter 16 inches and length of 3.5 km.

6.5 – TERMINAL OPERATIONS MANAGEMENT AND CONTROL

The control of the operations is managed by the Operations Control Center (CCO).

Communications are carried out through VHF radios at a previously agreed maritime frequency and recorded on VHF channels 10 and 16.

The control of operations is carried out following the guidelines of local, corporate and internal and external rules procedures to the Petrobras system.

A secondary means, through mobile telephony, is set in case of failure of the main system.

CCO TNC : 55 27 9.9944.3034

6.6 – MAIN RISKS

The main risks associated with the stay of ships during TNC operations are related to changes in weather conditions, such as variation in wind direction and wave amplitudes, common to occur between May and October. The presence of waves (East/Southeast – South/Southeast) and medium intensity winds is decisive for the permanence of the ship in the Terminal.

As a result of the action of these climatic determinants (winds and waves), large oscillations in the tension of the mooring and hoses may arise, making it impossible to maintain the loading/unloading operation.

The operation must then be interrupted and, when applicable and at the discretion of the Ship's Master and the Mooring Master, disconnect the hose and unmoor the ship, awaiting better weather conditions for a new mooring *(according to item 5.3.9 – table 2).*

During the entire period in which they are in the coverage area of the Terminal, ships must monitor the weather forecasts for the DELTA area region of the Brazilian Navy Hydrography and Navigation Center.

The terminal also has a daily updated weather forecasting service. Such forecasts can be requested through the VHF (Channels 10/16), or during operation, through the Mooring Master.

7

PROCEDURES

During the stay of the ship in the Terminal, several actions are carried out to enable safe operation and manage risks, in order to minimize them.

The perception of the state of the sea is not always the same when compared to the bridge of a ship and a small boat. The boarding of people is a task of high potential risk, and requires the full cooperation of all parties involved. It is up to the TNC Mooring Master to proceed or not with the original planning, that is, boarding steps; approach; mooring; connection; operation; disconnection; unmooring and disembarking.

In all phases, as described in the following sub-items, measures are taken with the objective of facilitating operations and planning them properly.

Planned actions include the exchange of appropriate information and the agreement, between the parties involved, of the safety standards to be performed.

Some of the items to be treated, although not exhaustive, are mentioned below, and others, which are considered relevant to ensure safe operating conditions, may be agreed between the parties that carry out the operations.

7.1 - BEFORE ARRIVAL

7.1.1 The information to be exchanged between the Terminal and the Ship, before arrival, is described in Appendices “B” and “C”, as recommended in ISGOTT (Pre-Arrival Exchange of Information); as well as in PE-2TP-00101-0 – Ship Operations in Monobuoys.

7.1.2 Repairs on board and washing in the ship's loading tanks cannot be carried out with the ship moored to the monobuoy. They should preferably be carried out in the anchorage area. In order to perform these services with the ship moored, prior authorization from the Terminal will be required.

7.1.3 Vessels destined for the TNC monobuoy must indicate Estimated Time of Arrival (ETA) 48 and 24 hours in advance. Change or confirmation of the arrival of the ship must be communicated a minimum of 24 hours in advance. In the ETA information, it must be specified by the vessel whether the time mentioned is local or GMT.

The arrival time is considered the moment the ship reaches the anchorage area or in bad weather conditions that make anchoring impossible, the time of the end of the ship's voyage plan (End of Sea Passage - EOSP).

Notice Of Readiness – NOR, will only be accepted if the ship is actually, in all respects, ready to commence operation.

The order of mooring of ships in the TNC is defined by Transpetro's schedule.

NOTE: Considering the peculiarities of operations in an Oceanic Terminal, where ship/shore access is always a complicating factor, ships must provide accommodation (cabins) and meals for a Mooring Master and six other persons, totaling 7 people, who will remain on board throughout the operation.

7.2 - ARRIVAL

7.2.1 Port Authorities

The port authorities are called by the ship's agents on the arrival of the ship. As it is an Oceanic Terminal, there is no visit from authorities on board. The dispatch is carried out by the maritime agency.

There is no Port Control or VTS of the Maritime Authority, in the locality of the monobuoy of the Norte Capixaba Terminal. Ships must inform, upon their arrival at the Terminal Operational Control Center (CCO), through VHF radio (channels 10/16), in accordance with international radio procedures, purposes receive instructions.

7.2.2 Bunker Supply

There is no bunker and water supply at the North Capixaba Terminal.

7.2.3 Relevant Information

The information to be exchanged between the Terminal and the Ship, before arrival, is described in Appendices "B" and "C", as recommended in ISGOTT (Pre-Arrival Exchange of Information); as well as in PE-2TP-00101-0 – Ship Operations in Monobuoys.

7.2.4 Emergency contacts, see chapter 9. Useful contacts see chapter 10.

7.3 - MOORING

7.3.1 Mooring system of the ship

The ship is moored to the monobuoy by a polyamide cable, 21" in circumference, 90 m long, with floating coating and complemented with accessories necessary for the handling and mooring of ships.

The Mooring Master will guide the ship as to the method to be followed for mooring on the monobuoy. Although there are no specific rules, the following points should be used as a guide:

a) Maintain communication between the vessel and the support boats at all times.

b) The Mooring Master must agree with the ship's Captain the place, heading, speed and lee for boarding of all his team, as well as materials and equipment; the support tug will be used in this situation.

c) After boarding, the Mooring Master must proceed to the ship's bridge, where he must receive from the ship's Captain a report with the main particulars of the vessel (*Pilot Card*);

d) The Mooring Master will request the Ship's Master, at an appropriate time, while sailing to the monobuoy, to prepare the mooring system at the bow of the ship;

e) The mooring boat must wait for the arrival of the ship about 300m from the monobuoy, in order to receive the ship's messenger cable for connection with Hawser cable;

f) The support tugboat holds the messenger of the cargo hose line, pulling the line in the opposite direction to the ship's approach route to the monobuoy;

g) At about 0.5 mile, with a ship speed about 1.5 knots, the ship must have a messenger cable of at least 6" x 220m, a strap and a shackle prepared to lower to the mooring boat;

h) At 250m, the mooring boat is positioned to pick up the ship's messenger cable. The ship drops the messenger cable onto the mooring boat. The mooring boat connects the ship's messenger to the hawser's messenger and launches the assembly into the water. The mooring boat moves away from the maneuvering area, positioning itself in a safe place and awaiting instructions. The ship commence to heave up the messengers;

i) At 90 m from the monobuoy, the ship stops at the mooring position and secure the chain of the mooring system in the Chain Stopper. The hawser's messenger must be disconnected from the ship's winch, allowing a quick unmooring in case of emergency;

j) The support tugboat deliver the cargo hose line at the ship's manifold;

k) Finally, at the discretion of the ship's Captain and the Mooring Master, the support tug is made fast to the stern of the ship (*Pull Back*).

NOTE: Further details and the mooring/ connecting procedure can be observed in Appendices E, F, G and H.

7.3.2 Shore/Vessel Access

Considering the peculiarities of the region of location of the monobuoy – in the open sea and unsheltered – the embarkation and disembarkation of personnel/crew of the ship is only advisable in cases of extreme need and when the sea and wind conditions make it possible *(see item 5.3.9)*.

The distance from the nearest landing support point (Barra do Riacho/ES) is located at 60 miles of navigation, since the region in the vicinity of the monobuoy does not have sufficient depth for landing the support vessels.

If it is imperative to disembark for reasons that justify all the logistics involved, the ship's Captain must contact his Agent so that a speedboat and land transport service is available, and the Terminal Supervisor must be informed of the situation, in order to take the necessary measures to facilitate the transit of the disembarked.

In any case, Transpetro will not be held responsible for the risks involved in transporting personnel/crew from the ship to shore and vice versa. All costs involved in this logistics will be the responsibility of the ship, which will formalize them through its agent.

In the TNC, when embarking/disembarking personnel (both from the ship and the Terminal) will be through an Offshore Basket made available by the Terminal (Certified/Approved according to NORMAM 05/DPC), with the aid of the Ship's crane (The minimum effective capacity of the ship's crane that intends to operate in the TNC must be 10 tons (SWL 10 t)).

7.4 – BEFORE LOADING TRANSFER

7.4.1 - Electrical Insulation

The electrical insulation of the ship will be carried out through an electrically discontinuous hose, installed in the floating cargo hose line, in accordance with the recommendations of ISGOTT.

7.4.2 - Loading Arm Connection

The Mooring Master will direct the connection and disconnection tasks of the hoses.

In view of the need to connect the floating hoses, the maximum distance allowed between the bow of the ship and center of the manifold must be a maximum of 119 meters.

After the ship is moored, the line of hoses will be hoisted, above the height of the balcony, by the Ship's crane. The minimum effective capacity of the ship's crane that intends to operate in the Terminal must be 10 tons (SWL 10 t). The hose will need support from the Ship's crane, throughout the operation.

The connection of the hoses must have a diameter of 16 inches and will be made from the port side of the ship. The resources required for connecting the hose line to the ship are provided by the Terminal. The same will be carried out by the Terminal mooring team, with the necessary support of Ship's crew.

During the entire operation, while connected (Ship x Terminal), the ship must keep a crew member positioned on its manifold, for purposes of monitoring and informing the Ship's Cargo Control Center (CCC), information on manifold pressures; efforts exerted on the hose; efforts exerted on the crane; sea status; wind status; and or any other variables that may compromise the smooth progress of the operation. Likewise, the Terminal must maintain throughout the operation, while connected (Ship x Terminal), its representative positioned in the ship's manifold, passing on the same information, but to the Mooring Master. In addition, the Terminal must also maintain another representative at the bow of the ship, purposes keep under its visual observation, the efforts made on the mooring cable (*Hawser*).

7.4.3 Tank Measurements

They must be carried out at the time of initial release and all safety precautions must be followed correctly. Attention should be paid to precautions to prevent the risks of spark ignition of static electricity during measurements, sampling, connections and loading/unloading operations.

Equipment used for this purpose must be, in addition to being certified, explosion-proof and properly grounded before use (ISGOTT Procedures).

Measurements/inspections of the on board tanks are carried out by the ship's personnel, under the supervision of the Mooring Master, observing all safety measures applicable to the case.

7.4.4 Ready to Operate

The start of the operation is subject to the holding of a preliminary conference (Safety Key Meeting) in which the LVSO (ISGOTT - Ship/Land Safety Checklist) and the Initial Chart will be agreed and signed.

For the start of the transfer, the Ready to Operate must be signed by all parties (Ship/Terminal).

7.4.5 Other Considerations

- In case there are ship's pending issues related to LVSO (ISGOTT - Ship/Land Security Checklist) and the Initial Chart, and that are not resolved by the crew in time, the ship will not be authorized by the Terminal to start the operation.

- During the entire period in which the ship is moored in the monobuoy, it is forbidden to discharge dense smoke through the chimney and carry out ramonage or cleaning of boiler piping, of any kind. Care must be taken to prevent sparks from escaping the chimney. Failure to comply with these regulations will result in one or more of the following sanctions:
    - Immediate interruption of operations;
    - A fine by the competent authorities;
    - Compulsory unmooring of the monobuoy ship;
    - Communication of the infringement to shipowners;
    - The fines, loss of time and all other related expenses will be fully debited to the ship;
    - Miscellaneous expenses that may cause damage to Transpetro's interests.

- The prohibition regarding the permanence of small vessels on the side or in the vicinity of the ships, while berthed, must be carefully observed, while moored to the monobuoy. Only service vessels, or those authorized by the Maritime/Port Authorities, or authorized by the Terminal, may be in the vicinity or alongside the ship, and provided that they meet the safety conditions. The violation of this standard will be immediately communicated to the competent Maritime/Port Authorities.

- It is forbidden to engage the propeller with the ship moored, unless previously agreed and the operation is also monitored by the Mooring Master.

- All ships in operation at the North Capixaba ~~Maritime~~ Terminal must keep their machines ready for departure full-time with short notice. Such a request is intended to prevent the ship from getting too close to the monobuoy or even causing any damage to the Terminal facilities. However, Machine commands (starts/tests) must not be carried out without the prior knowledge/permission of the Mooring Master.

7.5 – LOADING TRANSFER

7.5.1 Pressure and Flow Monitoring

The Terminal will keep a man from its mooring team attentive to the cargo cables and hoses.

During cargo transfer, the Terminal and support vessels will have the VHF transceiver on the channel determined by the Mooring Master and reserved for this purpose.

The monitoring of manifold pressures during cargo transfer must be recorded by the on board and shore representatives, at the hourly interval.

The Terminal will maintain control of the internal pressure variables of the pipelines through a supervisory control system.

During the entire cargo transfer operation, the accumulated flows and volumes are measured hourly and compared between the parties. Any significant difference should be investigated and the transfer operation stopped if necessary.

Any change in operating conditions must be communicated in advance and documented.

During operation, it is expressly forbidden to close valves that may cause back pressure in the system (Ship x Terminal).

7.5.2 – Special requirements for LPG

Not applicable for TNC.

7.5.3 Ballast Water

Loading/unloading of ballast water is allowed in port.

The slop, ballast and deballast lines of the ship must be used only for this purpose, being isolated from the other lines on board.

The act of deballasting the ship during the operation assumes that the Ship's Master is fully aware of the satisfactory and compatible quality of the water discharged into the sea. This water should be free of oils and/or oily residues, as well as pathogenic organisms that may alter the microbiological balance of the region, causing damage to marine fauna and flora, causing a negative impact on the local community and marine area of influence of the port, and should do so in accordance with the International Convention for the Control and Management of Ship Ballast Water and Sediments - BWM.

The Terminal may at any time, when the apparent conditions of the disaster suggest possible contamination of the waters, request a copy of the Ballast Water Report, in accordance with Normam-20, protecting its interests against possible questions.

7.5.4 SLOP Unloading

At the North Capixaba Terminal, there is no facility to receive oily waste (SLOP).

7.5.5 Washing of Tanks

It is not considered a common operation to wash the loading tank of the ship while moored at TNC, and it is not permitted under routine conditions. However, the COW operation may be permitted or authorized if scheduled, approved by the GIAONT, and authorized by the Supervision of the Terminal, after consulting with the Manager.

7.5.6 Port Repairs

While the ship is at moored on the monobuoy, repairs or maintenance work involving or likely to involve the risk of sparks or other means of ignition may not be carried out.

In extreme cases – where maintenance is imperative - all safety standards must be observed and met.

Any type of repair that implies any restriction of the ship during the stay must be previously authorized by the Terminal.

It should be noted that, in all cases, it is expressly forbidden to carry out any type of maintenance that results in restriction of the machine, which prevents or hinders the movement of the ship by its own means *(see item 7.4.5).*

7.5.6 Operational Safety Checklist – LVSO (ISGOTT)

During the entire period that the ship is moored in the monobuoy, the Terminal will carry out, through the Mooring Master, intermediate inspections of the ship as directed by ISGOTT.

7.5.7 Stoppage of Operations

The interruption of loading or unloading of the ship must occur in any situation that may pose a danger, whether to people, the ship, the environment or the Terminal facilities.

7.5.8 Operations may be suspended during storms, thunderstorms and/or high winds. Pay attention to electrical discharges from clouds of intense convective formation, cumulus type (dark clouds "charged"). *(see item 5.3.9)*

7.5.9 In any emergency situation, the Terminal may interrupt operations, so that all resources can be focused on mitigating any claim.

7.6 LOADING MEASUREMENT AND DOCUMENTATION

7.6.1 Hose Drainage

After the end of the operation, the Mooring Master must make sure about the authorization for the closing of the cargo outlets - Ship x Terminal – (Ship's Manifold**).**

The Mooring Master will authorize the start of drainage of the loading hoses used. The ship's representative will be responsible for arranging the drainage of the on board section and ready for disconnection.

7.6.2 Final Measurements

The final measurements of the on board tanks are carried out by the ship's personnel and could be accompanied by the Mooring Master. They must be carried out at the time of final release and all safety precautions must be followed correctly. Equipment used for this purpose must be, in addition to being certified, explosion-proof and properly grounded before use (ISGOTT Procedures).

The final inspection of the operation must occur after comparing the quantities handled (Ship x Terminal), as well as the entire complement of the stay documentation.

At the end, all documentation of the operation must be exchanged between the parties (Ship x Terminal), through email for the appropriate signatures.

7.7 UNMOORING AND LEAVING THE PORT

7.7.1 There are no restrictions for carrying out night maneuvers on the TNC. The Mooring Master normally starts the unmooring maneuver right after the end of the final inspection, that is, at the end of the completion/signatures of the documents. The analysis of meteoceanographic conditions must be carried out by the Ship's Master and the Mooring Master.

In all situations, safe conditions must be observed for the disembarkation of the Mooring Master and all his team, as well as materials and equipment.

7.7.2 The disembarkation of personnel and material occurs off the monobuoy, in a safe place, indicated by the Mooring Master, and in common agreement with the Ship's Master.

7.8 MEETING THE ISPS CODE

The North Capixaba Terminal (TNC) **is not ISPs certified for its unenforceability and, therefore, is prevented from issuing the Declaration of Security (DOS).**

However, the TNC has implemented corporate security measures applicable to ships and port facilities.

In case of need, these protection measures can be triggered by the Ship through the Port Facility Security Officer (PFSO), or through the VHF radio (channels 10/16).

For more details, the Port Facility Security Officer (PFSO) - trained in accordance with the requirements required by the IMO - can be contacted through the phones below:

- Phone: (+55 27) 3194-4305
- Mobile: (+55 27) 99974-5565

8

PORT OR ANCHORAGE ORGANIZATION

8.1 PORT CONTROL OR VTS

8.1.1 There is no port control of the ES Maritime Authority at the North Capixaba Terminal (TNC). The movement of ships is controlled by the Operational Control Center (OCC) of the TNC.

8.1.2 Contacts with TNC must be made via VHF (10/16) and/or according to chapter 10 - item 10.2 of this document.

8.2 MARITIME AUTHORITY

8.2.1 The Representative of the Maritime Authority to which the Terminal is subordinate is the Capitania dos Portos do Estado do Espírito Santo (CPES).

8.2.2 As it is an Ocean Terminal, there is no visit from authorities on board. The dispatch is carried out by the maritime agency.

8.2.3 The Terminal is considered a Private Port and is located on the open sea, outside the area of the Organized Port of Vitória/ES, with no official limits established.

8.2.4 The Captain of the Ports of Espirito Santo is the representative of the Maritime Authority, and he is responsible for checking the ship for compliance with national maritime legislation and international conventions ratified by Brazil, as well as determining actions and prosecuting those responsible, in the event of any incident/accident that occurs within the limits of the Terminal.

8.3 - PILOTAGE

8.3.1 There are no Pilotage services in the TNC monobuoy. The mooring and unmooring maneuvers of the ships are carried out, on a mandatory basis, by a Mooring Master who offers the Ship's Master his knowledge and experience about the place.

8.4 – TUGBOATS AND OTHER MARITIME SERVICES

8.4.1 The TNC provides as a support vessel, a tugboat with about of 45 tons of static traction (bollard pull), which can be used in mooring/unmooring maneuvers, or even during operations, as a "pull-back" vessel *(Annex C: See INFEX)*.

8.4.2 RELEVANT PORT SERVICES

8.4.2.1 Ship repairs are allowed only at the anchorage.

8.4.2.1 The other relevant maritime services, such as: divers, ship repairs, supply, etc., are not available in the TNC monobuoy, and may be contracted in the port of Vitória, about 90 miles south of the TNC, or be contracted at the ship's discretion. Regardless of the form adopted, these services must be contracted through the agents of the ships;

8.5 OTHER OIL/GAS TERMINALS

8.5.1 There are no other oil and derivatives terminals in the anchorage area or in the vicinity of the berth. The Barra do Riacho Terminal, Transpetro's closest operational support base, is about 60 miles south of the TNC.

9

EMERGENCY PLANNING AND RESPONSE

9.1 – EMERGENCY CONTACTS

The main contacts of the Terminal and Port Authorities to be activated by the ship in case of need are as follows:

ORGANIZATION	OPENING HOURS	IDENTIFICATION ACRONYM	PHONE (+55 27)	VHF/UHF	
				CALL	CONVERSATION
Support Vessels	24 hours	LUXENTO		16	10
Terminal Operations Control Center (CCO)	24 hours	TNC	99944-3034	16	10
Capitania dos Portos do ES	24 hours	CPES	2124.6500	16	11
Military Police (CIODES)	24 hours	PM	190	-	-
Federal Highway Police	24 hours	PRF	191	-	-
Federal Police	24 hours	PF	3041-8033	-	-
SAMU	24 hours	SAMU	192	-	-
Fire Department (CIODES)	24 hours	PM	193	-	-
Civil Police of São Mateus	24 hours	PC	3767-8143	-	-
ANVISA	7:30 am to 7:30pm	ANVISA	0800 642 9782	-	-

9.2 ENVIRONMENTALLY SENSITIVE AREAS

In the ERP – Emergency Response Plan, the areas most sensitive to an environmental impact are listed by leaves, which contains maps of environmental sensitivity, showing, according to the selected area, the points that are subject to the greatest impact when this type of event occurs on the coast of Espírito Santo.

9.3 OVERVIEW OF THE EMERGENCY RESPONSE ORGANIZATION

The responsibility regarding the various contingencies listed in the ERP - Emergency Response Plan are described in the table below:

Incidents within the TNC Area

Type of Incident	Responsible Organization	Other Organizations Involved			
Collision	Port Authority	Fire Department	Transpetro	-	-
Vessel Aground	Port Authority	Fire Department	Transpetro	-	-
Vessel Sinking	Port Authority	Fire Department	Transpetro	-	-
Vessel Fire	Ship	Transpetro	Fire Department	Port Authority	-
Fire in the Monobuoy	Terminal	Fire Department	Transpetro	Port Authority	-
Pollution	Terminal and Ship	Port Authority	Iema	Promar	Transpetro

9.4 EMERGENCY PLANS

9.4.1 The ERP – Emergency Response Plan – is the plan of Terminal TP/DOP/DTNNESE/UO-BAES/OPBRTNC to combat emergencies in all its facilities. It is available in the operational areas, in a frame located at the entrance of the operating room and/or through computerized systems. The person responsible for its update is the local HSE (Safety, Environment and Health).

9.4.2 - The emergency and firefighting equipment of the ship shall be kept operational and available throughout the period that the ship remains tied.

Fire hoses should be extended, one forward and one aft of the ship, unless fire-fighting monitors can replace this requirement.

A convenient portion of absorbent material must be kept ready for use, to be used in the event of an oil spill.

Additional precautions should be taken to avoid pollution of sea waters.

As an Ocean Terminal, it is imperative that the ship has its machine ready throughout the operation for any emergency.

The Terminal has an Oil Recover Vessel, in a permanent state of readiness, equipped with modern equipment and various facilities for use in accidental spills.

Periodically, the Terminal performs emergency drills and training aimed at training personnel to act quickly and promptly in the fight against emergencies in case of need.

9.4.3 - The Terminal does not have its own medical care.

9.5 PUBLIC EMERGENCY RESPONSE RESOURCES

For other emergencies, public organizations offer the resources for which they are intended.

9.5.1 PORT ADMINISTRATOR

Capitania dos Portos do ES - (27) 2124.6500.

9.5.2 MARITIME AUTHORITY

Capitania dos Portos do ES - (27) 2124.6500.

9.5.3 LOCAL EMERGENCY SERVICES

1st Independent Company (São Mateus) - 193 // +55 (27) 3763-3479

Roberto Arnizaut Silvares Public Hospital - +55 (27) 3767-7515 // +55 (27) 3767-7517

Linhares General Hospital: +55 (27) 3372-3043 // +55 (27) 3372-3121

9.5.4 STATE AND NATIONAL COMBAT ORGANIZATIONS

Mutual Support Plans in SBM III monobuoy may be triggered. The Local Area Plan and group of companies gathered for contingencies and emergencies, which have resources that can be used to mitigate sea pollution events.

9.6 COMBATING SPILLAGE OF OIL AND CHEMICALS

9.6.1 TERMINAL COMBAT CAPACITY

The resources available to combat oil spill situations are listed in the PEI (Individual Emergency Plan), which is available in the operating room and through computerized systems.

9.6.2 COMBAT CAPACITY OF THE ENVIRONMENT AGENCY

The Environment Agency of Espírito Santo (IEMA) does not have resources to combat oil spills.

9.6.3 - RESOURCES AVAILABLE FROM MUTUAL SUPPORT PLANS OF OTHER TERMINALS

The resources available at other terminals for response to pollution emergencies which have occurred in the vicinity of the Terminal are listed in the PRE.

9.6.4 COMBATING POLLUTION

The sub-items below describe the resources available for pollution emergency response in the monobuoy region and its adjacent areas.

9.6.5 COMBATING MEDIUM-SIZED SPILLAGE

In these events, national resources from Transpetro/Petrobras are requested. These resources, their readiness and form of activation are described in the pre and PEI.

9.6.6 COMBATING A MAJOR ACCIDENT

In these events, national resources from Transpetro/Petrobras are requested. These resources, their readiness and form of activation are described in the pre and PEI.

9.6.7 COMBATING OTHER MAJOR EMERGENCIES

The TNC's PRE and PEI list the actions and responsible parties for each type of event in the event of major accidents (catastrophic proportion) that may occur in the vicinity of the facilities (monobuoys), the pipeline range or vessels and that may involve third parties.

For events that are not provided for in said document, TRANSPETRO/PETROBRAS will make available all national or international resources that are within its reach.

10

CONTACTS

The following tables indicate the organization, position, telephones, electronic address, channel and radio frequencies of the main contacts of the Terminal and the companies that operate in it.

Location	Contact	Phone	E-mail	VHF/UHF Channels	
				Highlight	Conversation
Co-ordination	Operations Manager	(+55 27) 9. 9932.9276	r.paulini@transpetro.com.br	16	10
Operational Control Center - CCO	TNC Operator	(+55 27) 9.8152.2290	operatorestnc@transpetro.com.br	16	10

10.2 - Port Services

Location	Contact	Phone	E-mail	VHF/UHF Channels	
				Highlight	Conversation
Terminal	Operations Manager	(+55 27) 99932.9276	r.paulini@transpetro.com.br	16	10
Capitania dos Portos do ES	Capitania dos Portos do ES	(+55 27) 2124.6500	-	16	11
TugBoat	TS LUXENTO	(+55 21) 3512.0750	-	16	10

10.3 - Navigation Agents and Suppliers

Company	Business	Phone	Email / Contact	VHF/UHF Channels	
				Highlight	Conversation
GAC Maritime Agency of Brazil	Maritime Agent	+55 27 3024-3826 // +55 27 99255 9802// +55 27 99286.7542	shipping.vitoria@gac.com	16	To be agreed
Not available	Small Naval Repairs	-	-	-	-
Not available	Naval Repairs of Greater Porto	-	-	-	-
Not available	Garbage Disposal	-	-	-	-
Not available	Divers	-	-	-	-
Not available	Moorers	-	-	-	-

10.4 - Local Authorities, State and National Agencies

The table in section 9.1 contains the list of Authorities and their means of contact.

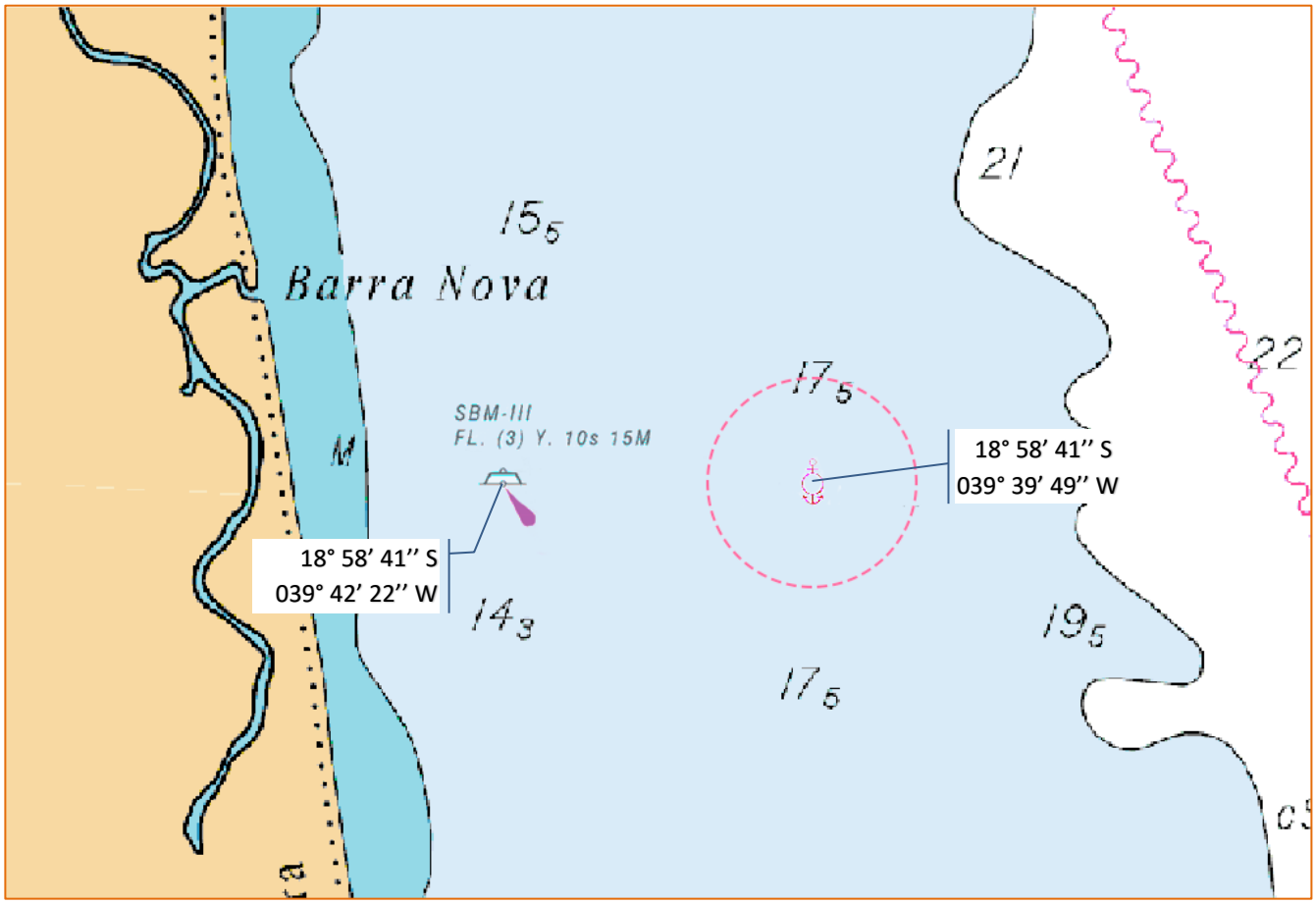
10.5 - Emergency Response Organizations

In the table of section 9.1 against the emergency response organizations available in the Terminal and the respective means of contact.

APPENDIX

APPENDIX A

LOCATION OF THE MONOBUOY



APPENDIX B

INFORMATION PRIOR TO SHIP 'S ARRIVAL TO TERMINAL

TRANSPETRO/DDT/ TP/DOP/DTNNESE/UO-BAES/OPBRTNC NORTH CAPIXABA MARITIME TERMINAL - TNC	
Request for information about the ship	
Ship's name:	Estimated time of arrival:
Flag:	Last Port:
Master's name :	Next Port:
Outfitter:	Agents:
Does the Vessel have an inert gas system?	Oxygen content in loading tanks:
Does the ship intend to wash with crude oil?	Does the ship plan to do tank washing tied up?
Overall length (LOA):	Draft on arrival:
Length between perpendiculars:	Maximum draft during transfer:
Breadth:	Draft at exit:

Propulsion	**Transverse propulsion**	**Required tugboats**
Number of engines: Number of propellers:	Bow (Nº and power): Bow (Nº and power):	Minimum:

Number and size of flanges	**Distances**
• Position: • Ballast: • Bunker:	• Bow to manifold: • Sided to the manifold: • Height from manifold to main deck:

Loading schedule		
Loading Appointment Type and quantity (m^3): Type and quantity (m^3):	Ballast unloading to sea Quantity (m^3): Estimated time:	Slop / ballast unloading to land Quantity (m3): Not applicable Estimated time: Not applicable

Unloading schedule		
Unloading Appointment Type and quantity (m^3): Type and quantity (m^3):	Ballast unloading to sea Quantity (m^3): Estimated time:	Slop / ballast unloading to land Quantity (m3): Not applicable Estimated time: Not applicable

Requested supply	
Type and quantity (HFO): Not applicable	Type and quantity (MDO): Not applicable
Additional information (if any):	

APPENDIX C

NP-1

iNFEX INFORMATION EXCHANGE CARD – BEFORE ARRIVAL V - 3.2023

Loading Vessel:		Voy:	
E.T.B (Estimated Time of Berth):			
Anchorage Area (Mooring at daylight only):	2 NM East of the Monobuoy. Sea bed: Sand/Mud 1 nm radius centered @ 18° 58' 41" S 039° 39' 49" W Forbiden drop anchor between buoy and terminal - 270°		

Cargo Sequence

Initial L. Displacement:	450 m³ - OILY WATER FROM TERMINAL TO VESSEL		
Cargo		Avrg d@20°:	
		Avrg d@20°:	
		Avrg d@20°:	
Final L. Displacement:	450 m³ - OILY WATER FROM VESSEL TO TERMINAL		

TNC – Terminal Norte Capixaba.

Berth:	SBM III	Lat.:	18° 58' 41" S	Long.:	39° 42' 22" W
Depth:		16 m	Local Water Density:		1,025 g/cm³
Max. Draft Allowed:		12 m	Max. DWT:		80.000

Terminal Manager	Mr
Op. Supervisor	Mr
Mooring Master	Mr
PFSO	Mr

• 01 Tug boat		BP :	
Pullback during operation according Mooring Master orders			
• 01 Oil Recover Vessel, in the area, during the operation.			

Hawser

01 un – Polyamide with 21" circ. x 90 m + 15 m chaff chain (76 mm)

Cargo Hose

01 un – Floating hose.. Connection by port side. 16" diam. # 150

VHF channel	
VHF channel	
Telephone	

Team to embark and stay during operation

01 Mooring Master + 06 Mooring crew (divers): 07 persons.

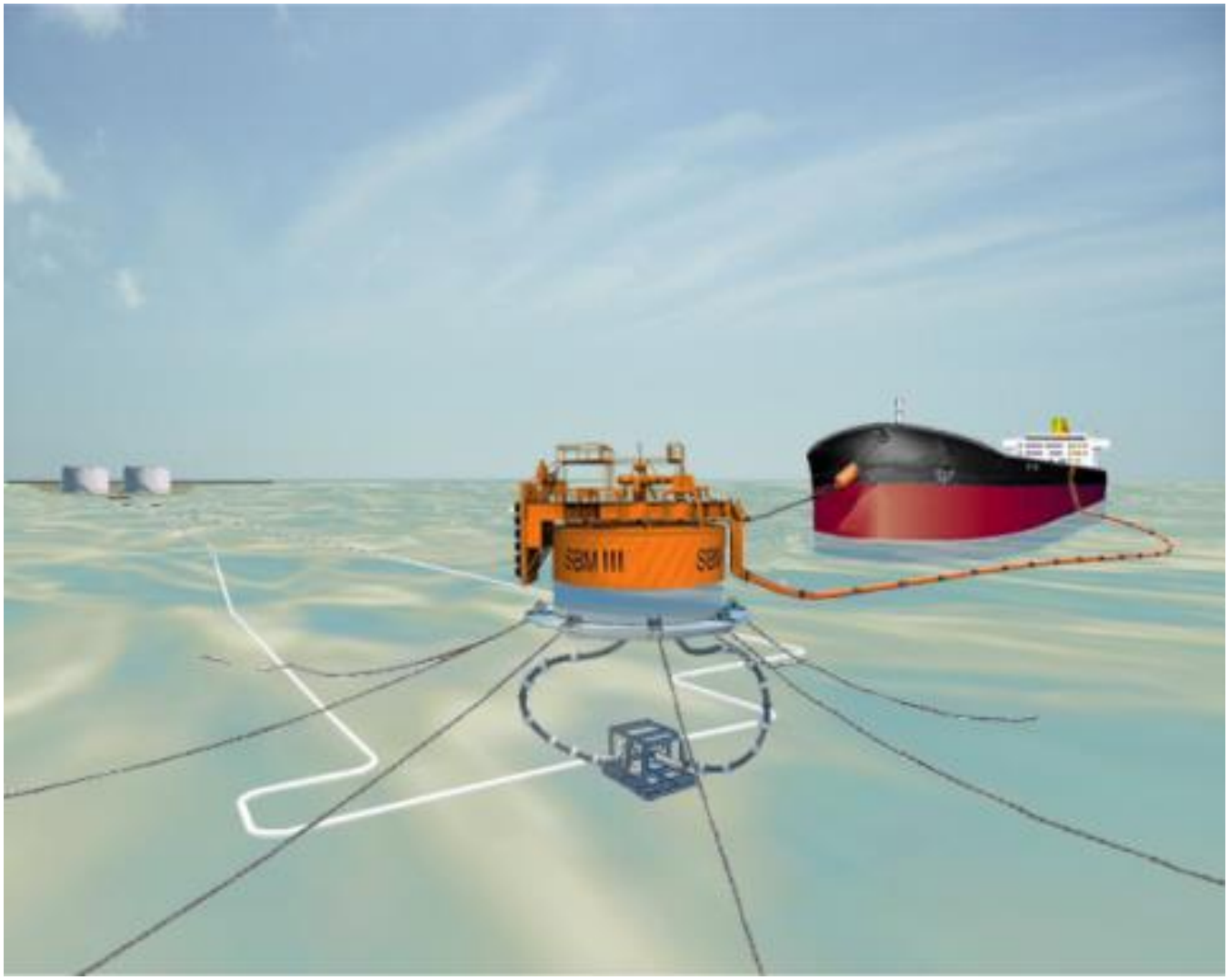
RMK: Embark will be port side by TNC's certified personal transfer basket.

Vessel will receive 02 tool boxes first, then the personal.

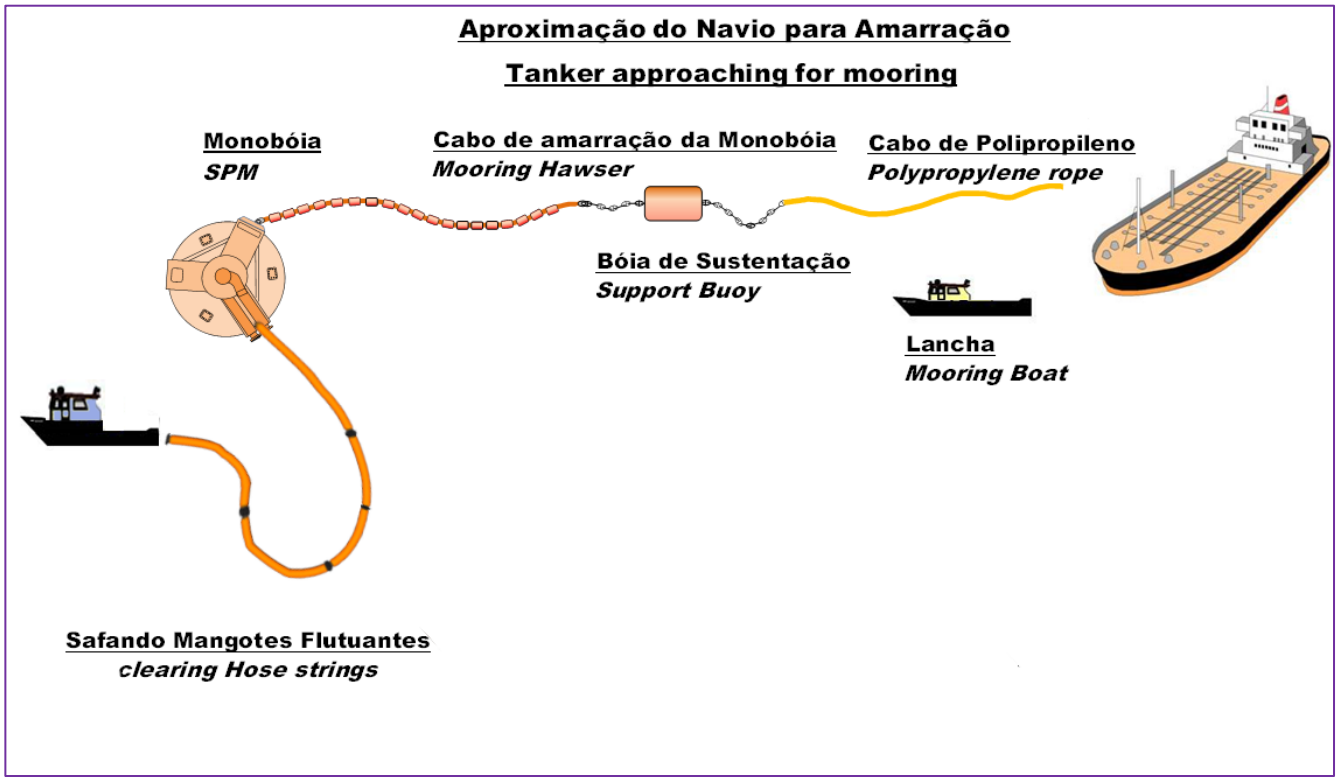
VEC – Vapor Emission Ctrl	Not available
SLOP Discharge	Not available
LOADING SYSTEM	Closed
MATERIAL / GOODS	Transfer Not allowed during operation
PERSONAL DISEMBARK	Not allowed
COW – Crude Oil Wash	Not available ** Loading port **

APPENDIX D

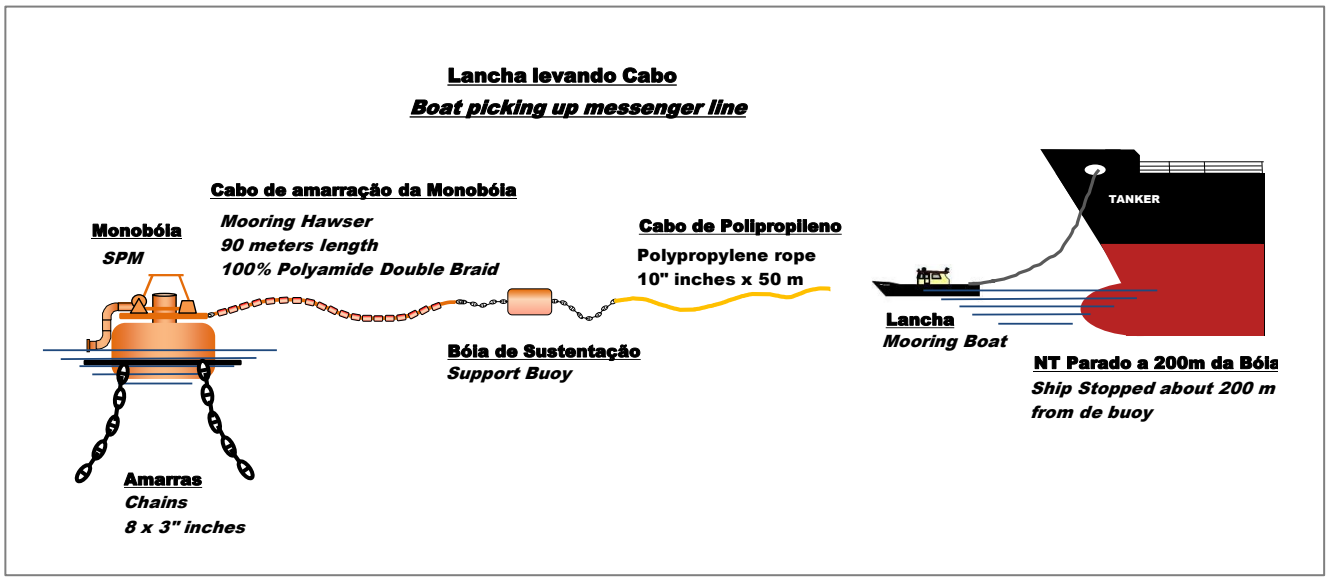
PLEM SET, CHINESE LANTERN, MONOBUOY, OVERSLEEVES (SUBMARINES AND FLOATS) AND SHIP.



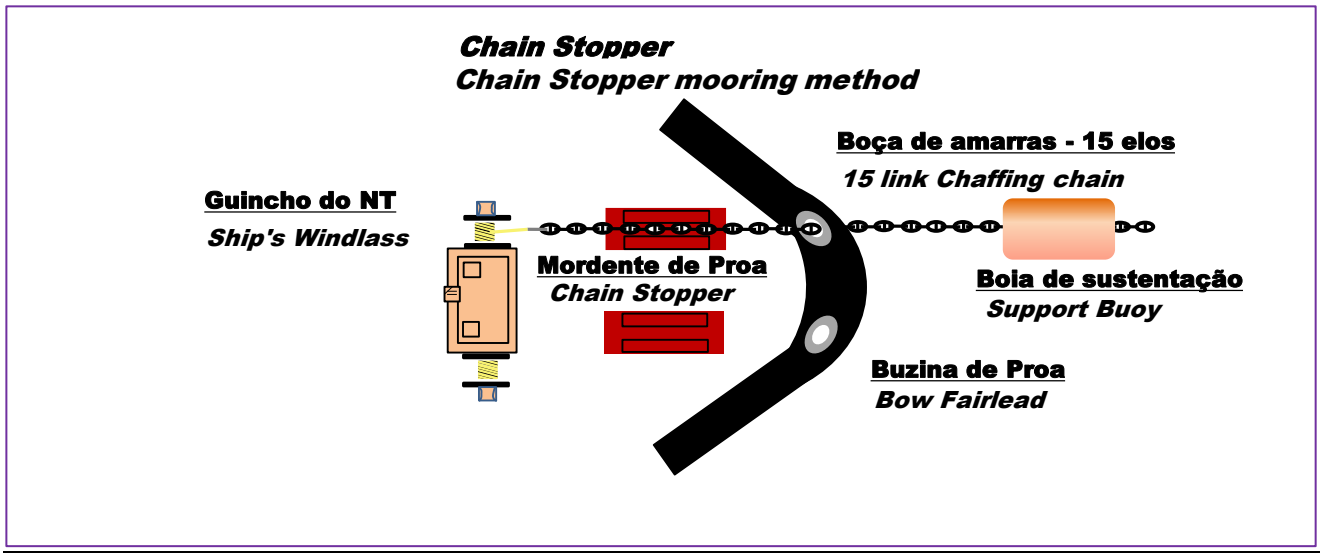
APPENDIX E



APPENDIX F



APPENDIX G

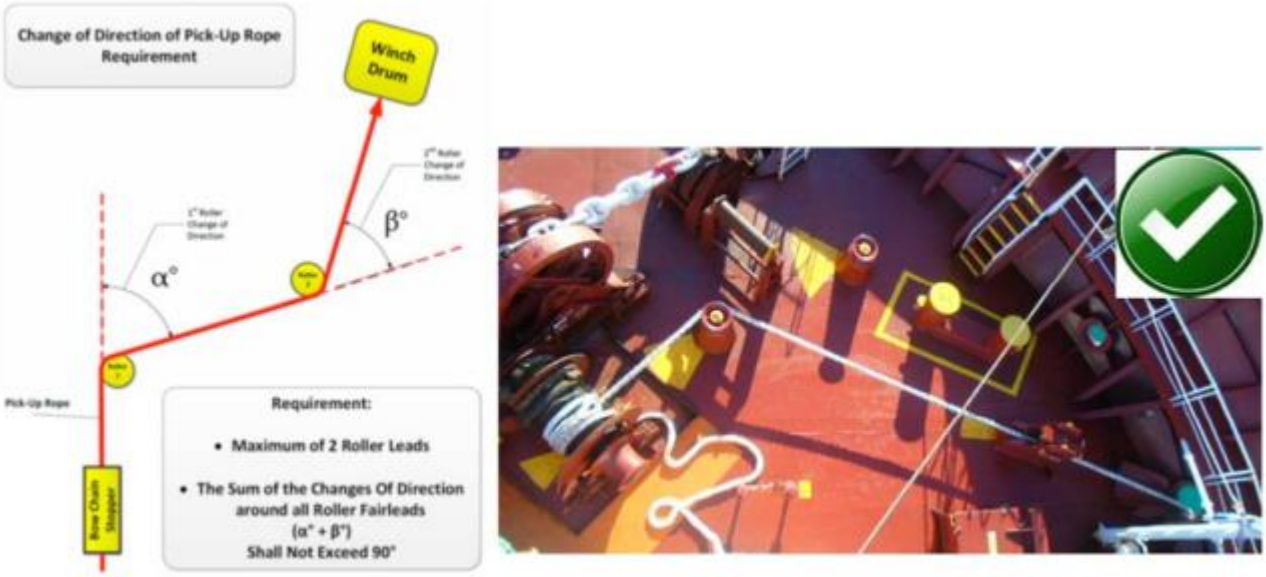

Chain Stopper
Chain Stopper mooring method
Boça de amarras - 15 elos
15 link Chaffing chain
Guincho do NT
Ship's Windlass
Mordente de Proa
Chain Stopper
Bola de sustentação
Support Buoy
Buzina de Proa
Bow Fairlead

APPENDIX H

MEG (Mooring Equipment Guidelines) – 4rd Edition – and OCIMF safety recommendations state that the winch drums used to store mooring lines in vessels for which the expected delivery date falls during or after 2009 should be directly aligned with the bow chain stopper (BCS) and the bow fairlead.

Due to the fact that such an arrangement is not always possible, the use of pedestal rollers is required. However, no more than 2 (two) pedestal rollers may be used for each BCS and there must be minimal variation in the direction of cable angles.

Minimum values are assigned at the discretion of each Oil Major. The majority of Oil Majors require that this value not exceed 90°.



BCS(s) must be located between 2.7 and 3.7 meters from the bow fairlead, regardless of vessel size. Bow fairleads must have minimum dimensions of 600 mm x 450 mm. If 1 (one) fairlead is used, it must be located along the vessel's center line; if it is recommended that 2 (two) fairleads be used, they must be spaced 2 meters from the center line and never more than 3 meters.

Figure illustrating the main recommendations from OCIMF and MEG: