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PORT INFORMATION

BELÉM WATERWAY TERMINAL

TA-BELÉM

2022

Review	Changes	Date	Preparation	Approval
1st	Item 5.3.2 Anchorage	12/01/2022	GIAONT	Management TA Belem
1st	Item 5.3.6. Pilotage	12/05/2022	GIAONT	Management TA Belem
1st	Item 5.3.7 Tugboats and Port Services	12/05/2022	GIAONT	Management TA Belem
1st	Item 5.3.10 General Restrictions	12/05/2022	GIAONT	Management TA Belem
1st	Item 6.5 Management and Control	12/05/2022	GIAONT	Management TA Belem
1st	Item 7.1 Before the Arrival	12/05/2022	GIAONT	Management TA Belem

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1st	Item 7.4.1 Security Verification	12/05/2022	GIAONT	Management TA Belem
1st	Item 8.3 Pilotage	12/05/2022	GIAONT	Management TA Belem
1st	Item 8.4 Tugboats	12/05/2022	GIAONT	Management TA Belem

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1. INTRODUCTION

This Port Information was prepared by Petrobras Transportes S.A. (TRANSPETRO) which operates the Belem Waterway Terminal (TA- Belem) in the port of Miramar.

It presents essential information for ships operating at the terminal, is distributed to interested parties in the Port, National and Local Authorities and in the various branches of the company.

Port Information is available in Portuguese and English versions.

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.

The Terminal reserves the right to change any of its operational characteristics presented herein, without prior notice.

TRANSPETRO will analyze any suggestions, recommendations or corrections to the matters addressed here, with a view to improving the information. If incorrect information is found which needs to be updated, please contact:

Belem Waterway Terminal – TA- Belem

Avenida Salgado Filho, S/N, Belem – Pará – Zip Code 66.115-225

Phone: 55 91 211-67025

Petrobras Transportes S/A - TRANSPETRO

Av. Presidente Vargas, No. 328, Centro, Zip Code 20091-060, Rio de Janeiro – RJ

Communication Advisory

Phones (021) 3211-9039 and (021) 3211-9000.

The latest version of this Port Information and the other terminals operated by Transpetro can be obtained from the following address

http://www.transpetro.com.br

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2. DEFINITIONS

(a) **Syzygy tide** – Condition in which the tide reaches the maximum amplitude at a certain time of the year.

(b) **Drought tide** – Condition in which the tide reaches the minimum amplitude at a certain time of the year.

(c) **TA-BELÉM** – "Belem Waterway Terminal"

(d) **VTS** - Vessel Traffic Service;

(e) **BP** – "Bollard Pull" - Vessel longitudinal static traction;

(f) **GIAONT** – generic designation of professional Operational Safety Inspectors. The name is derived from the Group for Inspection and Operational Monitoring of Ships and Terminals.

(g) **UTC** – "Universal time control"

(h) **DWT** - "Dead Weight Tonnes"

(i) **GAV** – "Aviation Gasoline"

(j) **QAV** – "Aviation Kerosene"

(k) **LPG** – "Liquefied Petroleum Gas"

(l) **COW** – "Crude Oil Washing"

(m)**MSIS** – "Movement and Stay Information System"

(n) **HSE** "Health, Safety, and Environment"

(o) **ZP –** Pilotage Zone;

(p) **DPC** – Diretoria de Portos e Costas da Marinha do Brasil

(q) **ISGOTT** – International Safety Guide for Oil Tankers and Terminals.

(r) **UN-Bunker** – Petrobras Department that markets the bunker (MF and MGO)

(s) **VTS** – Vessel Traffic Service

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3. CHARTS AND REFERENCE DOCUMENTS

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

3.1.Nautical charts

Area	Chart number			
	Brazil (DHN)	US Hydrographic Office	British Admiralty	Others
From Salinópolis to the Espadarte Channel	302			
From Cabo do Maguari to Mosqueiro	303			
From Mosqueiro to Vila do Conde	304			
Abaetetuba (Anchorage)	305			
Port of Belem	320		397	
Port of Vila do Conde	321			

SOURCE: Catálogo de Cartas e Publicações – DHN – 14ª ED. 2021 - 2025

3.2.Other Publications - Brazil (DHN)

Type/Subject	Post Number Brazil (DHN)
Normas e Procedimentos da Capitania dos Portos - CPAOR	NPCP – CPAOR
Roteiro Costa Norte	12ª ED. 2020 - 2024 - DHN

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4. DOCUMENTS AND INFORMATION EXCHANGE

Vessels that demand the port/terminal of Belem, Miramar, Agropalma, Tapanã, Outeiro, Vila do Conde, Ponta da Montanha, Imerys Rio Capim Caulim (RCC), Fronteira Verde terminal (TERFRON) and other ports located in the municipalities of the jurisdiction of CPAOR, must comply with the procedures established below in addition to the Rules of the Maritime Authority for Traffic and Permanence of Vessels in Brazilian Jurisdictional Waters (NORMAM)*/DPC), referring to the entry, dispatch and output procedures.

Information	Elaborated by:			Delivered to:			Comments
	Terminal	Ship	Both	Terminal	Ship	Both	
PRIOR TO ARRIVAL							
Estimate Time of Arrival (ETA) and information about the vessel		X		X			According to ANNEX E
Essential information about the Terminal	X				X		According TO ANNEXES B and C
Before the Transfer of Cargo or Bunker							
Details on cargo, "slop", ballast on board		X		X			According to ANNEX E
Information essential to the operation (complete on site)	X				X		According to ANNEX E
Ship/Terminal Safety Checklist			X			X	According to ISGOTT ED. 6 REV 0.
DURING CARGO OR BUNKER TRANSFER							
Repeat Safety Checklist			X			X	According to ISGOTT ED. 6 REV 0.
AFTER THE TRANSFER OF THE CARGO OR BUNKER, BEFORE DEPARTURE							
Information necessary to 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			Pilot disembarkation and departure time from the port

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5. DESCRIPTION OF THE PORT OF BELÉM

5.1. Overview

The area of the Organized Port of Belem, is constituted, according to Decree No. 5,230, of October 5, 2004, by the land port facilities existing in the city of Belem, namely anchorage, docks, quay and berthing and coasting piers, land, warehouses, buildings and internal circulation routes, existing on the right bank of the bay of Guajará, from the southern end of the Mercado Ver-o-Peso to the southwestern tip of Caratateua Island, at the mouth of the Pará River and maritime, contained in the polygonal of the Organized Port, covering all quays, docks, piers, berthing and coasting piers, warehouses, silos, ro-ro ramps, yards, buildings in general, road traffic routes and also the land along these margins and their adjacent areas, belonging to the Union or not incorporated into the heritage of the Port of Belem under its custody and responsibility.

Currently, the Port of Belem handles 35,576,045.5 t of cargo per year, and the main cargoes operated are: soybean, corn, bauxite, alumina, fertilizer, manganese, diesel oil, caustic soda, fuel oil, gasoline (CDP portal, 2020 statistics).

The Miramar terminal is an extension of the organized port of Belem.

5.2. Location

Porto is located in the municipality of Belem-PA, on the right bank of Guajará Bay downstream of the Mercado Ver-o-Peso and upstream of the Val-de-Cães Naval Base, at Coordinates 01°26.76'S and 048°29.87'W. At a distance of approximately 75 MN from the Atlantic Ocean.

The port and its accesses are included in nautical charts No. 304 and 320 of DHN, and the Roadmap, chapter IV, as well as the information disclosed in the Notices to Navigators must be consulted.

5.3.Terminal Approach

5.3.1. Overview

The Pará River separates the eastern, southeastern and southern coasts of Marajó Island from the mainland; it has a considerable width, with stretches in which the navigator located in the middle of the river does not see its banks; it communicates with the Amazon River through channels called straits and holes, which separate the numerous islands located between the southwestern coast of the island of Marajó and the mainland; and mouth of the Tocantins River and several smaller Rivers; and at its confluence with the Guamá River is the city of Belem, Capital of the State of Pará, with its Port.

Coming from the North, the recognition of the coast for landing is hampered by its particulars - low, with uniform vegetation and without notable geographical accidents and by the muddy coloration of the waters of the Amazon and Pará Rivers, which penetrate the sea outside, making it difficult to observe the Areas of lesser depth. You should navigate in depth above 20 m, to avoid the banks located on the North Bar of the Amazon River and on the Barra do Rio Pará.

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The navigator from the East can safely be located at a distance of 10m from the coast in depth above 10m and within reach of the lighthouses, until he recognizes Salinópolis.

In the demand of the Pará River bound for the Port of Belem and Vila do Conde and the logging of the Breves Strait, pilotage is mandatory for oil tankers of gross tonnage greater than 2,000.

The Miramar Terminal is located in the municipality of Belem-PA, on the right bank of the Guajará Bay downstream of the Port of Belem and upstream of the Val-de-Cães Naval Base, at Coordinates 01°24.20'S and 048°29.59'W. At a distance of 5 km from the Port of Belem (nautical chart 320).

The terminal is an extension of the organized Port of Belem, which serves an average of 1046 vessels annually, specializing in petroleum derivatives, alcohol, liquefied petroleum gas and other flammable liquid bulk.

According to the rules and procedures of the Capitania dos Portos da Amazônia Oriental, ships that demand the Miramar Terminal through the access channel, the maximum draft is in accordance with ***Ordinance No. 67 CPAOR, of May 3, 2018***, changed the maximum operational draft at the Miramar Terminal from 7.00 meters to 7.60 meters. However, ***DIREXE Resolution No. 65/2020, of November 20, 2020***, resolved to change the maximum operational draft of the Miramar Terminal from *7.60 meters to 7.30 m*.

The Terminal and its accesses are included in nautical charts No. 304 and 320 of DHN, and the Roadmap, chapter IV, as well as the information disclosed in the Notices to Navigators must be consulted.

Item 5.3.2 Anchorages

Anchorage Area	Notes
Anchorage No. 1 Chart No. 304	- For sanitary, customs and maritime police inspection. a) LAT 01º 05.00'S and LONG 048º 30.00'W; b) LAT 01º 05.00'S and LONG 048º 28.50'W; c) LAT 01º 06,50'S and LONG 048º 28,50'W; and d) LAT 01º 06,50'S and LONG 048º 28,50'W
Anchorage No. 2 (ICOARACI) Chart No. 304	- For oil tankers and propane tankers, awaiting berthing at the MIRAMAR Terminal. a) LAT 01º 16.00' S and LONG 048º 30.40' W; b) LAT 01º 16.30' S and LONG 048º 30.00' W; c) LAT 01º 17.65' S and LONG 048º 30.40' W; and d) LAT 01º 17.65' S and LONG 048º 30.00' W. - Maximum draft 12.6m
Anchorage No. 3 Chart No. 304	For outgassing oil tankers.
Anchorage No. 1 (Miramar 2) Chart No. 320	- For ships under repair, maintenance, litigation or awaiting orders. a) LAT 01º 23.75' S and LONG 048º 31.25' W; b) LAT 01º 23.75' S and LONG 048º 31.00' W; c) LAT 01º 24.50' S and LONG 048º 31.00' W; and d) LAT 01º 24.50' S and LONG 048º 31.25' W. - Maximum draft 7.92 m.

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Anchorage No. 2 Chart No. 320	- For warships or merchants authorized by the representative of the Maritime Authority.
Anchorage No. 3 Chart No. 320	- For ships awaiting berthing or in loading or unloading operation: - Area 3A (Miramar 1) a) LAT 01º 23.75' S and LONG 048º 30.50' W; b) LAT 01º 23,75' S and LONG 048º 30,25' W; c) LAT 01º 23,50' S and LONG 048º 30,25' W; d) LAT 01º 23,50' S and LONG 048º 30,00' W; e) LAT 01º 24,25' S and LONG 048º 30,00' W; f) LAT 01º 24,25' S and LONG 048º 30,25' W; g) LAT 01º 24,50' S and LONG 048º 30,25' W; and h) LAT 01º 24,50' S and LONG 048º 30,50' W. - Maximum draft 7.40 m. - Area 3B (Minas Gerais) a) LAT 01º 26.10' S and LONG 048º 31.70' W;

SOURCE: Updated table according to NPCP, 2022 and the North Coast Roadmap 2020 – 2024.

Anchoring prohibited:

Anchoring is prohibited in the following areas *(nautical chart 320):*

- Between the Val-de-Cães Naval Base and the Miramar terminal, in the area delimited in the chart by a restricted area boundary line;
- Southwest of Igarapé do Una (01°25.3'S – 048°29.9'W), in the area delimited in the chart by a restricted area boundary line; and
- In the dredged channel, without express authorization from the Port Authority. (North coast itinerary 2020 – 2024)

5.3.3 - Navigation Aids

The right bank of the Pará River is normally used in the positioning of the navigator who is destined for the Port of Belem.

The most particulars points of this margin are as follows:

- *Chart 302*

Coroa das Gaivotas Lighthouse: (00°34.65'S – 048°01.81'W) 8m high and green flashing light at an altitude of 8m with a range of 8m. Signals the west bank of the Seagulls' crown;

Taipú Tip: (00°40'S – 048°03'W) – It can be seen from the bottom of the Espadarte, initially appearing as an island; then two distinct elevations are observed. On the north bank of the tip is located the Taipú lighthouse (0:60), white, 30m high and group light of 3 white flashes at an altitude of 39m with visibility of 16m.

- *Chart 303*

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Ponta Maria Teresa Lighthouse – 9.4m at SW of Taipú lighthouse, near the tip of Maria Teresa, white flashing light at an altitude of 42m with a range of 15m and visibility sector of 164º (057º to 221°);

Necklaces (00°55.7'S – 048°17.3'W) – Location on the bank of the river, where a white church stands out. Along the coast there are some islets; on Quati Island is located the Colares torch, a metallic tube with visibility plate, on a white reinforced concrete base, 10m high and group light of 2 white flashes at an altitude of 14m with a range of 10m.

- *Chart 304*

Ilha do Mosqueiro (01°09'S – 048°28'W) – At the tip of Chapéu Virado, in the northern part of Mosqueiro, is the Chapéu Virado Lighthouse, a white metallic tube on reinforced concrete, having a visibility plate with white and red stripes, 10m high and green isophase light at 11m latitude with a range of 13m. 3m to the ENE of the lighthouse there is a remarkable tower.

Tatuoca Island – 4m to SSW of the Chapeu Virado lighthouse, marks the northern end of the left bank of the channel that gives access to the port of Belem, called Mosqueiro channel. At the northern tip of the island is the Tatuoca torch, 11m high, 2 groups of white fast lights at an altitude of 12m with a range of 9m and visibility sector of 220° (081 ° to 301°);

Icoaraci – 8m to the S of Mosqueiro, a well-built and illuminated location on the river bank. With Icoarací through the ship are already seen the highest buildings, the towers of the churches and some notable chimneys of the city of Bethlehem.

- *Chart 304 and 320*

Forte da Barra Torch (01°22.65'S – 048°29.56'W) – 12m high and white fast light at an altitude of 13m with a range of 9m, on a small rocky island, island of Forte da Barra, located next to the right bank of the access channel to the port of Belem;

Belem Lighthouse (01°27.92'S – 048°30.32'W) – 42m high and white flashing light at an altitude of 45m with a range of 15m, in the Guajará bay.

The left bank of the Pará River is normally used only by inland navigation vessels that are destined for the city of Soure and other locations on the island of Marajó.

The most particulars points of the left margin are as follows:

- *Chart 303*

Soure (00°44'S – 048°31'W) – town located on the Paracauari River (or Igarapé Grande), on the left bank of the mouth of this river, which flows into the Pará River. It has several wharfs for inland vessels navigation;

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Soure Lighthouse (00°44.52'S – 048°30.32'W) – 30 meters high group light of 2 white flashes at an altitude of 35 meters with a range of 14 meters with a range of 5 miles, on the island of Amores, right bank of the mouth of the Paracauari river;

Salvaterra Torch – 0.65 M to the S of the Soure lighthouse, with visibility plate, 8 meters high and white flashing light at an altitude of 14 meters with a range of 5 miles, on the island of Amores, right bank of the mouth of the Paracauari river;

Ponta de Joanes – 9 miles south of Soure, is taken by the city of Joanes. In it is the Joanes lighthouse, with visibility plate, 17 meters high and white flashing light at an altitude of 23 meters with a range of 14 miles.

- *Charts 303 and 304*

Ilha Coroa Grande – 10 miles to the SSW from the tip of Joanes, at the south-eastern end of the island of Marajó. On its south bank is the **Coroa Grande torch**, a group light of 3 white flashes at an altitude of 18 meters with a range of 10 miles and a visibility sector of 136° (255° to 031°);

- *Chart 320*

Ilha das Onças – This island occupies the entire left bank of the river in front of Belem. Its NNE margin, where there are several sunken hulls visible, is buoyed by an east cardinal luminous buoy.

5.3.4. Port Limits

According to Decree No. 5.230, of October 5, 2004, the polygonal area of the Organized Port of Belem has its vertices defined by the following geographical coordinates:

- Point A: Latitude 1°14’16.31” S Longitude 47°29’06.45” W
- Point B: Latitude 1°14’16.09” S Longitude 47°32’59.99” W
- Point C: Latitude 1°17’34.24” S Longitude 47°32’59.99” W
- Point D: Latitude 1°17’34.34” S Longitude 47°31’18.24” W
- Point E: Latitude 1°17’32.03” S Longitude 47°31’18.67” W
- Point F: Latitude 1°24’32.05” S Longitude 47°30’30.35” W
- Point G: Latitude 1°26’34.05” S Longitude 47°30’30.35” W
- Point H: Latitude 1°27’33.05” S Longitude 47°29’43.35” W
- Point I: Latitude 1°27’33.05” S Longitude 47°27’46.35” W
- Point J: Latitude 1°16’45.91” S Longitude 47°29’06.59” W

The Port and its accesses are included in DHN nautical charts No. 304 and 320.

5.3.5. Port Control or VTS (Vessel Traffic Service)

The Port of Belem does not have a special traffic control and navigation service. Port control of the Miramar terminal is the responsibility of Companhia Docas do Pará – CDP, which is done through VHF channel 16 radio communication, with a central unit and three furniture.

Additional information, rules and notices in force, consult directly the website of the Port Authority: **http://www.cpaor.mar.mil.br or E-mail secom@cpaor.mar.mil.br**

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5.3.6. Pilotage

ZP-03 - Belem, Complex Port of Vila do Conde and Adjacencies (PA)

a) Particulars of ZP-03

It comprises access by the Quiriri channel (or Marajó), or by the Espadarte channel, on the Pará River, from the pilot waiting points located downstream of the outer end of the Xingu bank and Cabeço do Norte and the one located downstream of the Lower Espadarte, to the port of Belem, port of Vila do Conde and access to the Straits region to the southwest of Ilha do marajó. The Tocantins River is considered an extensive waterway of this ZP.

The Quiriri (or Marajó) channel is considered optional, in view of the existence of beaconing (according to DHN Permanent Notice No. 065/02), to domestic and foreign ships that do not carry dangerous cargo. Pilotage in this ZP is mandatory, except for the section considered optional.

The mandatory pilotage zone has the following places of embarkation and disembarkation of the pilot and the ports of Belem and Vila do Conde and the logging of the Breves Strait.

PILOT WAITING POINTS			
ZP *	**PORT/TERMINAL**	**LAT./LONG.**	**NOTES**
3	Port of Belem, Vila do Conde and Madeira do Estreito de Breves.	00°17'00" S 047º49'00" W	Point No. 01 – ships coming from the North and West directions, which demand the Pará River.
3	Port of Belem, Vila do Conde and Madeira do Estreito de Breves.	00°24'30" S 047°46'00" W	Point No. 02 – ships coming from the East direction, basically originating from Brazilian ports, which demand the Pará River.
3	Port of Belem, Vila do Conde and Madeira do Estreito de Breves.	01°06'00" S 048°29'30" W	Ships from the high seas, which have not received pilot for the optional section, receive pilot off the Mosqueiro Village, marking the Ponta do Chapéu Virado lighthouse, at 146° true, at a distance of 2.5 MN.

SOURCE: NORMAM 12/DPC Mod. 21; NPCP-CPAOR E ROTEIRO COSTA NORTE, 2020 – 2024.

*** ZONA DE PRATICAGEM.**

b) The Pilotage Service in ZP-03 is performed by the following companies:

I) Baia do Marajó Serviços de Praticagem S/S Ltda – MARAJÓ PILOTS;

II) Espadarte Serviços de Praticagem S/S Ltda – ESPADARTE PILOTS;

III) Canal do Quiriri Serviços de Praticagem S/S Ltda – QUIRIRI PILOTS;

IV) Rio Pará Serviços de Praticagem S/S LTDA;

V) Pará River Pilotage Company and Portos da Região S/S Ltda (PARÁ RIVER PILOT);

VI) CRISTIAN ANTONIO CIPRIANO S/S LTDA

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Ships demanding the Amazon Basin or coming from it, by the region of the straits: will carry out the exchange of pilot in the vicinity of Ponta do Pinheiro, in Icoaraci.

The request for pilot for entry must be made by the company, its agent or agent, in a proper form, 48 hours in advance of the arrival of the ship to Salinópolis, whose time must be confirmed 24 hours, 12 hours and 8 hours in advance. To leave Belem or Vila do Conde the request must be made 24 hours in advance.

5.3.7 Tugboats and Port Services

NPCP-AOR, 2022, establishes that the entry and output maneuvers in the access channel to the Port of Belem of ships with *Overall Length* (LOA) equal to or less than 160 meters, are compulsorily assisted by a tugboat, if they do not have a *bow thruster*. On the other hand, the maneuvers of ships that have LOA above 160 m will be compulsorily assisted by at least one tug.

5.3.8. Navigation risks

5.3.8.1. From Barra Norte do Rio Amazonas to Barra do Rio Pará

In offshore navigation, depths below 20m should be avoided due to frequent variations in depth and changes in position of the seats. The existence of drifting vegetation and tree trunks torn from the banks of rivers, on the surface or submerged, is another danger to navigation that requires special attention.
From the place of embarkation and disembarkation of pilots, in front of the city of Salinópolis, to the bar of the Pará River, one should not navigate between the coast and the 10m isobath; in this area there are numerous banks, the bottom is dirty and the sea breaks. At depths above 10m, the following hazards must be avoided (According to the North Coast Roadmap):

- **Pedra da Corvina**
- **Banco Piraquembáua de Fora**
- **Baixo do Espadarte (or Banco do Bragança)**
- **C.S Rio Guaíba** (00°27.09′S – 047°52.85′W)
- **Benches of Tijoca**.

5.3.8.2. Pará River, from Barra to the Port of Belem:

Chart 303: The Pará River separates the eastern, southeastern and southern coasts of the island of Marajó from the mainland, has a considerable width, with stretches in which the navigator located in the middle of the river does not see its banks; it communicates with the Amazon River through channels called straits and holes, which separate the numerous islands located between the southwestern coast of the island of Marajó and the mainland; it is the mouth of the Tocantins River and several smaller rivers.

Chart 21300: Coming from the North, the recognition of the coast for landing is hampered by its particulars - low, with uniform vegetation and without notable geographical accidents and by the muddy coloration of the waters of the Amazon and Pará Rivers, which penetrate the sea outside, making it difficult to observe the areas of lesser depth.

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You should navigate in depth above 20 m, to avoid the banks located on the North Bar of the Amazon River and on the Barra do Rio Pará. The navigator from the East can safely be located at a distance of 10m from the coast in depth above 10m and within reach of the lighthouses, until he recognizes Salinópolis.

Chart 303: Next to the island of Marajó there is an alternative channel, the Quiriri channel, which begins in the Quiriri light buoy (Safe waters) is buoyed by light buoys from starboard and port, to the southern end of the Coroa Seca. Pilotage in this channel is optional for national and foreign ships that do not carry dangerous cargo, to the anchorage off Mosqueiro.

Ships whose pilotage is not mandatory should navigate with great caution, because the depths of the channels to the positions of the banks near the usual areas of navigation change very often.

Chart 302: At the bar of the Pará river, navigate in the Espadarte channel, whose critical section, between the lower Espadarte (Bragança bank) and the Tijoca banks, is buoyed by 2 light buoys on the starboard side and 4 on the port side. The Potions channel should only be invested with local knowledge, as it is subject to variations. Between the Espadarte bass and the Coroa das Gaivotas, pay attention to the ship's trim on the crown, when the tide is ebb.

Chart 303: In the Quiriri channel, light buoys 8,10,5 and 12 guide navigation.

Chart 304 and 302: In the Mosqueiro channel avoid the approach of the stones to the northeast of Tatuoca island, marked by a starboard light buoy. In the channel parallel to the island of Barra, pay attention to the bank that surrounds this island, whose northern and eastern limits are marked by luminous starboard buoys.

Chart 320: When approaching the Val-de-Cães Naval Base, pay special attention to the Barra stones and Forte stones, marked by port luminous buoys; and to the Val-de-Cães stones, marked by port luminous buoys, North cardinal and South cardinal.

At the approach of the pier of the port pay attention to the banks that border the dredged channel, especially the bank of the City, which occupies the entire border area of the pier.

The navigator must be aware that the outline of the emergent parts of the river represented in the nautical charts is subject to constant changes, due to intense geomorphological, erosive and sediment deposition activities, which can cause phenomena such as the emergence, growth and displacement of sandbanks, island growth, erosion of banks, etc...

From the bar to the Port of Belem, the following hazards should be avoided, located near the right bank and the navigable channel: (According to the North Coast Roadmap)

- **Coroa das Gaivotas**
- **Recifes das Andorinhas**;
- **Pedras**;
- **Pedras**;
- **Pedras da Barra**;
- **Pedra Val-de-Cães**;
- **Alto-fundo**;
- **Casco soçobrado**.

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5.3.9. Free practice and release by port authorities

The ship's commander, 6 hours before arrival at the port, informs the ship's agent so that he can make arrangements for the schedule of visits by the port authorities to grant Free Practice. Ships coming from areas considered endemic will be visited at the anchorage, before berthing. In other situations, the ships will be visited at the terminal by the Port Health, Customs - when there is imported cargo - and Federal Police – when it is a foreign ship.
Cabotage ships from a non-endemic area must send a specific message to Port Health through the agency in order to obtain free practice, attesting to their good health status, which will be radioed to the ship.
Ships coming from a foreign port, even if they have already called in a national port, will also be inspected by Customs, and the agent must make a petition to this effect, providing the necessary details. They will also be submitted to the visit of the Maritime Police, after the granting of free practice, for the verification of the seafarer's card or passports of all crew members and passengers.

In any case, as long as free practice is not granted, there may be no embarkation and disembarkation of any crew member and/or visits on board.

5.3.9.1. Documents necessary for clearance by Health Port:

- Crew List
- Passenger list
- List of vaccination in validity against yellow fever
- Declaration of International Maritime Health
- Photocopy of the rat removal certificate
- Photocopy of cargo manifest
- List of the last port visited
- Ballast water report

5.3.9.2. Documents necessary for clearance by the Federal Police:

- Crew List
- List of narcotics
- List of weapons and ammunition
- Passenger list
- List of the last port visited
- Passenger list in transit
- Crew Passports or Logbook

5.3.9.3. Documents necessary for the clearance of the ship by Customs:

- Crew List
- Passenger list
- Ship's particulars

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- List of the last port visited
- List of existing material on board
- List of crew members' belongings
- General baggage declaration
- Copy of cargo manifest and bill of embarkation

5.3.9.4. Documents necessary for the clearance of the ship by the Port Authority:

- Commander’s Statement
- General Statement
- Crew List
- Passenger list
- Cargo declaration
- On board bill of material
- Copy of commander' logbook
- Copy of International Tonnage Certificate
- Copy of international cargo mooring line

5.3.9.5. For the release of the ship, the following must be obtained:

- Customs Output Pass
- Departure pass from the Port Authority
- Output Pass of the Federal Police

When there is boarding of family members of crew members on ships destined abroad, in addition to the specific license granted by the Port Authority, the respective passports must be delivered to the agent 24 hours BEFORE THE SHIP 'S DISPATCH, for the purpose of regularizing the boarding visas and passenger lists with the Federal Police.
On return from abroad, commanders must send messages to the terminal, informing the number of passengers to be disembarked. At the time of the entry visit, the respective passenger list, together with passports, must be presented to the Federal Police to be inspected by the police and health authority.

Notes:

1. The QUEBEC flag shall be flown at the approach of the terminal and lowered when free practice is granted. The Brazilian national pavilion must remain jammed throughout the stay in the terminal.

2. Smuggling – Brazil's laws are strict regarding smuggling. Therefore, commanders must instruct their subordinates to avoid taking ashore, or transacting cigarettes, cigars, tobacco, alcoholic beverages, souvenirs, and other imported items. Before arrival, they must be collected to the bonded warehouse (seal), which will be under the responsibility of the commander during the entire stay in the terminal. In no way shall any commercial transaction be permitted whether between employees, crew or any other persons.

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5.3.10. General Restrictions

- There are no restrictions on times to berth/unberth and the tide must be observed.
- Ships demanding the Port must invest, through the access channel, with the flood tide, turn in the maneuvering basin, berth by BE.
- Ships with draught clearance (maximum length 110 m), can berth, by port side, with the ebb tide. In this sense, the maneuvers in the afternoon are restricted to its execution for when the wind is greater than 20 knots.
- It is mandatory to use boats equipped with VHF to flare the spies.
- Special situations: For ships with a length greater than 180 m, the channel known as "Tutoca channel" should be used, that is, limited to the north by the "Middle bank", maximum recommended draft at 4.0 m plus the increase in tide minus the pilot's foot that varies according to the length and TPB of the ship, thus avoiding the turning of the maneuvering basin.

Ships with a length greater than 180m should use the channel known as "Tatuoca Channel", that is, limited to the north by the "Middle Bank", maximum recommended draft of 7.00 m in the high seas, thus avoiding turning in the maneuvering basin. This is a critical maneuver, and prior agreement of the pilotage is indispensable.

5.4.Maneuvering Areas

Waterway access to the Miramar Terminal is through the same channel as the Port of Belem, the Oriental and is functional throughout the year. Waterway access to the Port of Belem is through a channel called Oriental with 90 to 180 m of average width, 6,000 m long and 9 m deep, when dredged, being the main maritime entrance of the Port located between the island of Fortim and Barra. It is small or non-existent the crossing of ships along the access of the Organized Port of Belem, due to the organization of the Port does not allow this to occur.

The table below shows the main data of the access channel to the Port.

CARACTERÍSTICAS DO ACESSO AO PORTO DE BELÉM	
Comprimento	6.000 m
Largura	90 a 180 m
Profundidade	5,10 a 7,92 m
Calado	7 m
Média anual de assoreamento	600.000 m^3

Source: PDZ, CDP, 2017.

The maximum length of ships at the Miramar Terminal is limited to 185 m at pier number 1 (north) and 210 m at pier number 2 (south). Berthing should occur only by BE with tide running upstream.

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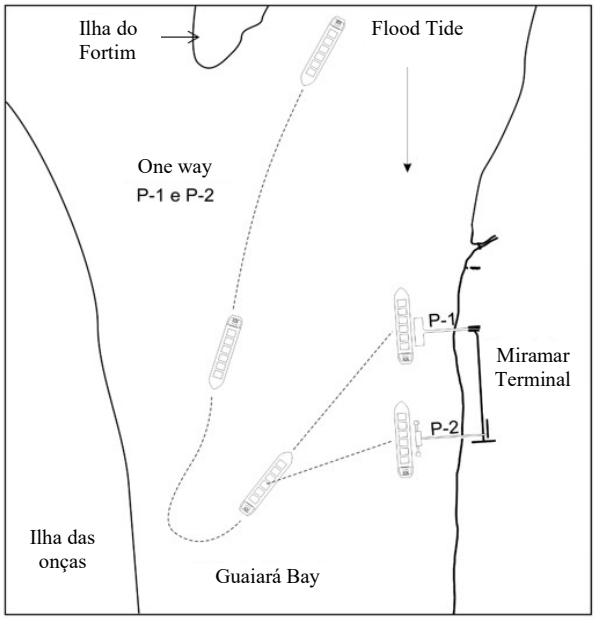

The maximum allowed bottom speed (Vf) of the ships between ICOARACI and the PORT OF BELÉM is 8 knots, and in the access channel of the PORT OF BELÉM is 6 knots.

- In the holes Madre de Deus, Piramanha/Nazário and Cavado, which cross the island of Onças, the maximum Vf allowed is 5 knots.

The maximum permitted bottom speed (Vf) of ships between ICOARACI and Miramar Terminal is 8 knots

5.4.1. Navigation and Berthing Aids

Signaling the entrance to the port is the buoy "Tatuoca", located at lat 01°11, 22' S and long 048° 29, 50' W.

The ship must rotate in the border area to the Miramar terminal to start berthing, and at the Miramar terminal a towing service is required to assist the ships during berthing.

5.4.2. Controlling the Depths

DIREXE Resolution No. 65/2020, of November 20, 2020, resolves to change the maximum operational draft of the Miramar Terminal from *7.60 meters to 7.30 meters*, until further resolution.

5.4.3. Maximum Dimensions

Each pier of the Terminal allows berthing of only one ship at a time. At Pier No. 100 (North) operates only liquid bulk - petroleum and LPG derivatives, allowing berthing of ships of a maximum of 15,000 DWT and up to 140 m in length. At pier No. 200 (South) it also operates only liquid bulk – Oil and LPG Derivatives, allowing berthing of ships of a maximum of 30,000 DWT and up to 210 m in length.

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5.5.Environmental Factors

Because it is located north of the Tropic of Capricorn, the climate of the region is tropical. The average annual temperature is above 26°C and the average temperature of the coldest month is above 18°C. Relative humidity is high, usually above 85% in the early afternoon hours.

Table with the main meteorological information of the Port of Belem:

Average Temperature	25.7 °C
Atmospheric pressure	1,009.5 mb
Relative humidity	84.2%
Rains	2 800 mm
Average water height (syzygies), yellowing	3.22 m
Average water height (syzygies), low tide	2.42 m
Maximum setting height (18.03.80)	+ 4.21 m
Minimum low-water height (16.07.20)	- 0.37 m

5.5.1. Predominant Winds

The winds of NE predominate. Winds are generally moderate and visibility is good, except for equatorial showers which can be preceded by strong winds and cause a sharp drop in visibility. The winds in the afternoon (general) usually intensify reaching bursts of force 4 to 5, mainly in the months of September to December ("bro" time).

5.5.2. Waves

There are no records of waves capable of harming the berthing, unberthing and ship operations maneuvers.

5.5.3. Precipitation

In winter, there is constant rainfall in the area. The period of highest concentration of rainfall runs from December to April, considered in the region as winter, with the maximum rainfall of 470mm/month referring to April. In the summer, which runs from June to September, the level of precipitation decreases to the minimum of 48mm/month in September.

5.5.4. Lightning Storms

With few occurrences, however with greater frequency in the rainy season, which runs from December to April.

5.5.5. Visibility

Normally considered good to excellent, it can be drastically reduced in the rainy season, from December to April, when it also occurs, on average, 2 days per month of fog. We have no records of operations that have been affected by limited visibility.

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5.5.6. Tide Currents and other currents

The tide has a semi-diurnal particulars , suffering strong influence of wind and rain, with a maximum amplitude of 3.7m and a current of up to 3.5 knots, which lasts for up to two hours after the reversal of the tide. The average level heights over the card reduction level are as follows: 2.75 m in Salinópolis, 2.26 m in Colares, 1.84 m in Mosqueiro and 1.80 m in Belem.
In the Espadarte Channel, the tidal current speed can reach 3.5 knots in the syzygy. At the pier of the port of Belem, flood and ebb currents push the ship to the pier and can reach up to 3.5 knots, lasting for two hours after the landing

At the Miramar terminal, the speed at the bottom of the access channel should not exceed 8 knots. In the approach to berthing, a speed of 4 knots must be used.

5.5.7. Measurements

There is no weather and water level information available for the vessel approaching for berthing. These measurements are not made at the Miramar terminal.

6. DESCRIPTION OF THE MIRAMAR PETROCHEMICAL TERMINAL

6.1. General Description

Belonging to CDP – Companhia Docas do Pará. Located in the municipality of Belem-PA, located on the right bank of Guajará Bay downstream of the Port of Belem and upstream of the Val-de-Cães Naval Base, at a distance of 5 km from the Port of Belem.

The Miramar Terminal is an extension of the organized Port of Belem, specializing in petroleum derivatives, hydrated alcohol, liquefied petroleum gas and other flammable liquid bulk. The Terminal and its accesses are included in nautical charts No. 304 and 320 of DHN, and the Roadmap, chapter IV, as well as the information disclosed in the Notices to Navigators must be consulted.

The waterway access can be made by two channels, being separated by Ilha da Barra, the **Western channel** called, from Ilha da Barra of "Canal do Minas Gerais" or "channel of the ilha das Onças". And through the **Eastern Channel**, called from the Miramar Terminal the “Port of Belem Channel”, the same that allows the entry of ships to the Port of Belem.

The Miramar Terminal is dedicated exclusively to the implementation of facilities for handling liquid and gaseous fuels, where discharge has always predominated in relation to the shipment of these products, as a large part is consumed in the city of Belem and part in the interior of the State of Pará. It is a "strategic" terminal, as it moves all the fuel consumed in the State of Pará, through which all the liquefied gas, gasoline, alcohol, kerosene, diesel oil, arrives to be distributed in the regions of influence.

6.2. Physical Details of Berths

The Miramar Terminal covers a territorial area of 870,270.75 m². Its territory consists of two operational areas, one primary where the piers, ramp and administrative buildings of CDP are installed and another secondary (retroport) where several fuel distribution companies are supplied, through pipelines that are born on the piers and interconnect later.

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Coasting structures: It has two independent coasting facilities (piers), in a "T" shape, allowing three berths, where each coasting platform is interconnected to an access bridge, all being executed in reinforced concrete and constituting in its infrastructure, precast reinforced concrete vertical piles.

Pier 100 - Liquid bulk: It has a 77.50 m long coasting platform, built in reinforced concrete, using precast concrete coffins as platform tray, currently, only two berths are in operation, being: external berth 101, intended, primarily, for the berthing of ships, being mostly ships carrying LPG and internal berth 102 is intended for the berthing of tank ferryboats. It has two dolphins resting on inclined piles, executed in reinforced concrete, intended for mooring.

Pier 200 - Liquid bulk: it has a coasting platform with 40.00 m in length and two adjacent berthing dolphins, executed in reinforced concrete, interconnected by bridges of 18.50 m in length, as well as three operational support platforms, in metallic structure, installed in the front wall of the berthing platform and the berthing dolphins, currently, only two berths are in operation, being: external berth 201, intended, as a priority, the berthing of liquid bulk ships and in the internal berth 203 is intended for the berthing of tank ferryboat. It also has two mooring dolphins consisting of blocks resting on vertical piles, executed in reinforced concrete.

The table below shows the particulars of the berthing terminal's berths:

MIRAMAR TERMINAL									
Berth No.	**Type**	**Berth Length (m)**	**Depth (m)**	**Tide (m)**		**Breadth (max.)**	**Vessel length (m)**	**Products**	**Displacement (maximum)**
				Syzygy	**Dry**				
1	Pier	76,3	7.30	3.22	2,42	W/ restrictions	140	Derivatives, bunker and LPG	4 KNOTS
2	Pier	40,0	7.30	3.22	2,42	W/ restrictions	210	Derivatives, bunker and LPG	4 KNOTS

6.3 - Mooring and Berthing Arrangements

- Berthing at piers 100 and 200 is advisable by BE, with tide running upstream;

- It is mandatory to use two appropriate boats, equipped with VHF, to flare the spies;

- For ships using steel cable in berthing/unberthing, the speedboat to assist in mooring/unmooring must be manned by three (3) crew members;

- Maneuvers in the afternoon are restricted when the wind is greater than or equal to 20 knots;

In any case, the prevailing wind conditions must be observed.

PIER 100

- Acess bridge:	L = 123.0 m; W = 6.0 m;

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- Coasting Platform:	L = 77.5 m; W = 23.5 m;
- Number of Mooring Dolphins = 2	L = 5.0 m; W = 5.0 m;

PIER 200

- Coasting Platform:	L = 40.0 m; W = 15.0 m;
- Support platform (central):	L = 15.0 m; W = 5.20 m;
- Acess bridge:	L = 180.0 m; W = 4.00 m;
- Number of Mooring Dolphins = 2	L = 11.0 m; W = 12.0 m;
- Number of Dolphins Berthing = 2	L = 11.0 m; W = 12.0 m;
- Two Support Platforms (side):	L = 7.30 m; D = 4.50 m;
- Two Access Bridges (side):	L = 18.50 m ; D = 4.50 m;

6.4. Particularsof the berth for Loading, Unloading and Supply

The tables below indicate the products handled, available oversleeve, flange details, temperature limits, flow rates and maximum loading/unloading pressures.

Notes:

The information presented below is for informational purposes only and is based on historical maximum values. It is necessary to define the operational conditions (oversleeves, on board outlets, number of mooring lines, number of pumps, pressure, flow and temperature) during the initial release of the ship.

The positioning of the loading/unloading oversleeve is presented in Appendix C (Distribution of loading/unloading outlets in each berth).

Berth No.	Products		Oversleeve (Diameter)	Class (lbs/inch)	Receipt or Shipment	Temperature		Max. flow (m^3/h)	Pressure Max (kgf/cm^2)
						Min	Max		
1	Diesel		8”	150	R	Environ.	Environ	900	7,0
	Gasoline		8”	150	R / E	Environ.	Environ	450	7,0
	Bunker	MGO / Mixture	4”	150	E / R	Environ.	90	450	7,0
		Ferryboat	6”	150	E / R	Environ.	90	450	7,0
	LPG		6”	300	R	5	45	500	18.0
2	Diesel		8”	150	R	Environ.	Environ.	900	7,0

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	Diesel	6”	150	E	Environ.	Environ.	450	5.0
	Gasoline	8”	150	R	Environ.	Environ.	900	7,0
	Gasoline	6”	150	E	Environ.	Environ.	450	5.0
	Alcohol	8”	150	R	Environ.	Environ.	900	7,0
	Alcohol	8”	150	E	Environ.	Environ.	450	7,0
	QAV	8”	150	R	Environ.	Environ.	900	7,0
	GAV.	8”	150	R	Environ.	Environ.	900	7,0
	Bunker MGO / Mixture	4”	150	E	Environ.	90	450	7,0
	Bunker Ferrybo at	6”	150	E / R	Environ.	90	450	7,0
	MF-380	8”	150	R	Environ.	90	900	7,0

6.5. Management and Control

At pier 100 and pier 200 there are control cabins, in which throughout the stay of the vessel to the port, operational auxiliaries responsible for the operational part of the ship-terminal interface will remain, such as pressure and flow measurement; sample withdrawals; safe positioning of the oversleeves during operation.

There is the Terminal Control Room (Cargo Control Center) in the administrative area of Transpetro near the tank area, occupied by Operators of Operational Supervisors, responsible for terminal-ship communication during the vessel's stay in the port; Control of loading and unloading operations of petroleum products from the berths, through the computer system; Control of product pumping to other Companies; Control of Documentation inherent to the operation at the terminal.

Near the Cargo Control Center is the Operation Programming and Logistics Room, the Operational Technical Coordinator Room – CTO, in addition to the Chemical Laboratory and Administrative Area.

In the operational safety part, the Nautical Inspectors (GIAONT) control the operational safety, as established by ISGOTT and company Standards, checking items related to connection, mooring lines, employee safety, operation control regarding oil spill, among others

6.6. Main Risks

- Passage of a large ship, which is intended for or leaving the Port of Belem, in front of the Terminal without machine reduction, causing strong seas, throwing the ship against

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the pier, which may cause the rupture of mooring lines and product discharge oversleeves;

- Friction of the oversleeves used for unloading products with the concrete floor of the pier during operations, due to fluctuations in the river level caused by the tide, which may attach and therefore break;
- Strong winds, although not very frequent, constitute a potential risk, and may move the ship away from the pier, breaking cables and oversleeves for product discharge operation;
- Increased current due to the so-called moon tides, causing greater tensions in the mooring lines, especially in the bow and stern launchers.

7. PROCEDURES

The Terminal sends the Terminal Port Information Booklet to the ship through the Agency after confirming the operation at the terminal. As well as the list of documents required for release with local authorities.

7.1. Before Arrival

Ships bound for the Miramar Terminal must inform the Estimated Time of Arrival – ETA 72 hours and 48 hours in advance to the protecting agent, by email. 24 hours in advance, the ship must confirm its arrival at the port.

Prior to the ship's arrival at the port, the agency must exchange information by email with the Control Room, in order to instruct both the vessel and the CTO and Operational Supervision with the **Pre-operational Informations**. It must contain all the information necessary to facilitate and expedite the operation of the ship, such as: product, quantity, product density, bunker, among others. The information from the ship to the terminal is described in APPENDIX D.

On board repairs and washing of the ship's cargo tanks should preferably be carried out in the anchorage area. It is prohibited by the port authority, CDP, to clean tanks with the ship berthed.

7.2. Arrival

Port control of the Miramar terminal is the responsibility of Companhia Docas do Pará – CDP, which is done through VHF channel 16 radio communication, with a central unit and three furniture.

Bunker supply requests must be forwarded to UN-Bunker, through its Agent, which in turn pass them on to the terminal. The water request is made through the Agent to the Port Authority, in this case the CDP, as the port is the one that provides drinking water. The water supply can be made at both piers, with a 2 ½" hose and without the use of a pump, the supply is due to a difference in level, at a flow rate of 8 m³/h.

Bunkers can also be supplied from both piers, with 4" oversleeve on pier 2, an 8" overslivee can be used for MF (marine fuel) supply, depending on the conditions of the ship's

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outlets. The maximum supply pressures are 7.0 kgf/cm². The TA-Belem is able to supply, in addition to MGO, mixtures from MF-30 to MF-380, for all ships berthed at piers 1 or 2.

7.2.1. Telephone of the authorities

Below is a list of the phone numbers of the main authorities.

CONTACT OF THE AUTHORITIES	
AUTHORITY	**PHONE**
IBAMA	(91) 3210-4706
Federal Police – Immigration Sector of the Port of Belem	(91) 3214-8000/8002 (91) 3214-8014/8016
Internal Revenue Service – Customs of the Port of Belem	(91) 2183522/2183209
Fire Department	(91) 4006-8399
Val-de-Cães Naval Base	(91) 3216-4444
Sanitary surveillance	(91) 3344-1765
Barra do Pará Pilotage	(91) 9920-60787/4006-6550
União dos Práticos da Bacia Amazônica Oriental Ltda	(91) 3259-7879
CDP – Companhia Docas do Pará – Autoridade Portuária	(91) 32136606
Northern Nautical Signaling Service (4th Naval District)	(91) 3216-4006
INFRAERO – Information - Val-de-Cães International Airport	(91) 3183-6000 / (91) 3210-6000
Military and Civil Police (CIOPE)	190
Municipal Emergency Room	(91) 3184-6337

7.3. Berth

Mooring lines must be permanently maintained in order to keep the ship berthed at all times. All cables must be kept under adequate tension during operation, with the winches under brake, the use of automatic tension winches is not allowed.

Al the mooring lines must be of the same type, gauge, and material (fiber or steel), i.e., mixed moorings are not permitted. Mixed lashings are those in which the cables that perform the same function are of different type, gauge and materials. The mooring lines must be arranged as symmetrically as possible in relation to the midships.
The beams must be oriented as perpendicularly as possible to the longitudinal axis of the ship and passed as far as possible fore and aft. Spring lines should be oriented as parallel as possible to the longitudinal axis of the ship.
If fiber hands are used on steel cables, they must be of the same type, with a gauge 25% more than the minimum breaking load of the steel cable, of the same material and of the same length.

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The horizontal angle of the bow and stern lines in relation to the direction of a beam perpendicular to the longitudinal axis of the ship may not exceed 45°. The maximum voltage applied to the cables must be 55% of their rupture limit.
Approach, berthing and unberthing maneuvers must be performed at low speed, always against the current.
Care must be taken when passing the ship's aft mooring lines to the mooring boats, in order to avoid accidents with the ship's propellers and mooring vessels.

The recommended moorings consider that the cables and winches of the ships are in good condition. While at berthed, ships must keep the machines on stand-by, ready to go into service.
CDP has personnel available and qualified to handle the mooring lines of ships, in berthing and unberthing maneuvers. All necessary work during berthing, cargo transfer and unberthing, opening and closing of hatches and deck cleaning, must be carried out by the ship's crew.

Every ship destined for TA-BELÉM must be able to perform the mooring below. The safety of the mooring is the responsibility of the Master of the ship and will be assessed by a qualified safety inspector. TA-BELÉM may veto or interrupt an operation in which the mooring of the ship is considered unsatisfactory. Below is the minimum setting for mooring:

MOORING ARRANGEMENT – MIRAMAR TERMINAL						
PIER	SPRINGS		BEAM		SPRINGS	
	Bow	Aft	Bow	Aft	Bow	Aft
1	3	3	2	2	2	2
2	4	4	2	2	2	2

TA-BELÉM piers do not have telescopic ladders to access berthed ships. All ships must provide means of safe access for the embarkation and disembarkation of personnel, and always keep their boards and ladders ready to be lowered. If a board is used, there must be space for free walking and it must be fitted with a safety net. Life buoys with guide lines must be available in the vicinity of the means of access. The ship's gangway or gangway ladder should be used when necessary.

Access to land using the terminal facilities is subject to the rules of CDP – Companhia Docas do Pará, which is the Port Authority, so crew members can disembark as long as the formalities are completed. A request must be made by the agent and each crew member who disembarks must have a valid Registration and Passport booklet. If the crew member no longer returns to the ship, he/she must present an air ticket, proving that he/she will leave the country by air.

Berth No.	Does it require practice for maneuvering?	TPB (max.)	Approach		Mooring Points		Mooring Lines		
			Speed (max.)	Angle (max.)	Bollard	Hook	Spring	Beam	Spring
1	S	15.000	4	45 °	8	-	3	2	2
2	S	30.000	4	45 °	8	-	4	2	2

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7.4. Before to Cargo Transfer

7.4.1. Safety Check

After berthing, in order to verify the operational safety conditions, equipment and procedures, and thus release the beginning of the operation, the Nautical Inspector must carry out the Safety Inspection, using the Operational Safety Checklist recommended in the latest edition of ISGOTT.

At the end of the verification, the inspection must indicate the exact condition of the vessel, in which the GIAONT must present to the Commander or Legal Representative the result of said inspection, as well as if there are pending issues that are not resolved by the crew, the ship will not have authorization from the terminal to start the operation.

The Inspector must immediately notify the Nautical Advisor and the Operational Supervisor of the pending issues found, and even if they are repaired, they must be registered in Annex IV of the PMO and service flag.

7.4.2. Electrical Insulation

All Terminal connections that have an interface with the ships are equipped with an Electrical Insulation Joint (JIE), in addition to all oversleeves lines, they are of the electrically continuous type, and the Port has the application of the land cable, next to the overslivee area.

7.4.3 Resources for Oversleeves Connection

The resources required for connection are agreed upon in the first contact between the ship and the terminal. The ship must arrange the outlets and install reductions and cargo connections in order to enable the coupling of the oversleeves, the terminal does not have a loading arm, Cranes are used on Pier 2 and only oversleeves on Pier 1.

The personnel hired by TRANSPETRO make the connections and disconnections of the oversleeves and ground cables, assisted by the on board personnel, who handle the winches and load sticks, when necessary. After connecting the loading oversleeves, they are tested for tightness, using the static pressure of the terminal column for this purpose.

A board representative will monitor the entire operation, and must be near the cargo outlet of the ship. All connected oversleeves must be supported on supports, especially those connected to reductions.

The ship is responsible for monitoring the outlets on board that received the connections of the oversleeves, observing any type of abnormality and/or leaks.

7.4.4. Measurements, Calculations, Sampling and Initial Release

On board measurements shall be carried out by the ship's personnel and accompanied by terminal representatives and other inspectors. The material used must be properly grounded, in order to avoid spark ignition of static electricity, and the measuring accessories must be explosion-proof. Whenever possible, inspection of a ship should be done without entering the tanks. If the cargo requires internal inspection of the tank, all safety precautions inherent in entering confined spaces must be taken. In this case, the ship must leave the tanks degassed after the end of the

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discharge and in a “free for man” condition. If TA-BELÉM or the Inspectorate rejects the inspected tanks, the delay will be charged to the ship.

The start of the operation only occurs after the completion of the Initial Chart, during the Initial Release, by the shore and ship representatives, according to the information contained in APPENDIX “E”. This procedure aims to establish an agreement between the terminal and the ship that can guarantee the minimum safety conditions for the start of the cargo transfer.

7.4.5. Soot Blowing on the Port

It is prohibited to carry out branching or cleaning the boiler piping with the ship berthed. Care must be taken to prevent sparks from escaping the chimney. Failure to comply with this regulation will result in one or more of the following sanctions: immediate interruption of operations; fine from the competent authorities; compulsory unberthing of the ship from the pier; communication of the infraction to the shipowners; liability of the ship for fines, loss of time and all other related expenses arising from this fact.

7.4.6. Prohibition of Permanence of Unauthorized Vessels

The prohibition on the presence of unauthorized small boats on the side or in the vicinity of berthed ships should be strictly observed. Only service vessels at the terminal or authorized ones may be in the vicinity or alongside, as long as they meet all safety conditions. The transgression of this rule must be reported to the competent authority.

7.4.7. Restriction of propeller movement during the stay of the ship

Berthed ships will not be able to move their propeller(s) while remaining connected to the unloading and/or supply oversleeves. A ratchet may be used, after due notice to the terminal operator, but the propeller must be moved so slowly that absolute safety is achieved. Ships shall be liable for any damages resulting from such procedures.

7.5. Cargo Transfer (information with the operation)

The pressures will be monitored during cargo transfer and recorded by the on board and shore representatives on the ship's manifold hourly. The terminal controls the internal pressure and flow variables, which are verified in real time through the supervisory system available in the control rooms. Since some diesel, gasoline, GAV and QAV lines do not have a Mass Balance or flow meters, in this case the terminal flows will be calculated from the receiving or shipping tanks.

Operation flow rates, measured on the ship and at the terminal, and the total volume moved are compared hourly and compared between the parties, having, according to the system used, a limit parameter for operational control. Any change in the conditions of operation must be communicated and documented between the parties.

It is expressly prohibited to close the valves during the operations , which cause back pressure in the system.

LPG ship may berth at both pier 1 and pier 2, preferably at pier 1, leaving pier 2 free for ships with deadweight of up to 30,000 DWT. The terminal has a steam return line for pressurized

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ships, which may or may not be used, will depend on the transfer operations to LPG distribution companies.

The slop, ballast and deballast nets and tanks of ships must be used only for this purpose, being isolated from the other nets on board. The water ballast to be discharged into the sea must be completely free of oil, any oily residue or other substance capable of causing pollution of sea water. TA-BELÉM does not receive ship SLOP.

COW operation is not performed, as the terminal is characterized by being only of clear derivative discharge.

Repairs or maintenance work of any nature, involving or likely to involve, risk of sparks or other means of ignition may not be carried out while the ship is berthed at the terminal's piers. In extreme cases, all safety standards should be observed and met. Repairs involving the facilities of the piers or implying any restriction of the ship during the stay must be previously authorized by TA-Belem and the port authority of the Miramar terminal, CDP.

Intermediate inspections, as per ANNEX A of “ISGOTT”, will be carried out by GIONT during the operation of the ship every 4 hours.

The interruption of the loading or unloading of the ship must be requested, via radio or other means of communication, whenever it occurs in any situation that may pose a danger, whether for the ship or for the terminal. Operations are also expected to be temporarily suspended during storms, thunderstorms and/or high winds. The operator of the terminal is authorized to interrupt / suspend the operation in the case of non-compliance with any of the rules and regulations concerning safety, universally accepted and adopted in the maritime transport of oil.

For any emergency situation, TA-Belem interrupts ongoing operations so that all resources are focused on mitigating the claim. The actions and contacts for each type of emergency are described in the management's Emergency Plan and the main telephone numbers.

7.6 Cargo Measurement and Documentation

7.6.1. Drainage of oversleeves

After the end of the operation, the drainage of the oversleeves used must start. Terminal operators will provide drainage of the oversleeves used for the closed system on the pier. The ship's representative must provide for the drainage of the on board section, according to the TA-BELÉM Operations Manual, item 11.1, item "a", which says that - prior to disconnection, shortly after the end of operation with the ship, the operational assistant supports the CDP team for the drainage of the oversleevesfor the sump-tank installed on the Pier.

Finally, the operational assistant must ensure that all manifolds involved in the operation are properly flanged as well as the oversleeves.

7.6.2. On board Final Measurement

The final measurements on board will be carried out by the ship's personnel and accompanied by the terminal representatives and other inspectors, when there is imported cargo the Customs representative will also be present. The material used must be properly grounded and

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the measuring accessories must be explosion-proof. Final release of the ship: it takes place after comparing the quantities handled and complementing the laytime documentation.

When there is a remainder on board, the RMQB - Measurement and Quantities Report on Board must be completed and signed and stamped by both, otherwise the ship must issue the Inspection Certificate, where both sign agreeing that the ship's tanks have been inspected and are empty.

7.7. Unberthing and Output from Port

During the unberthing maneuver and output from the port, the limits of the channel and the dangers listed in item 5.3 and its subitems must be observed. The presence of the pilot in the unberthing and output maneuvers from the port is indispensable.

The pilot usually disembarks at the same embarkation point for entry into the port, where a Port Pilotage speedboat will await him.

8. PORT ORGANIZATION OR ANCHORAGE PROCEDURES

8.1. Port Control or VTS

Like the Port of Belem, there is no port control. The contact with the port authority at the Miramar terminal is made through communication via VHF radio channel 16 or telephone, n° (91) 3213-6606, directly with the port supervisor or with the mobile unit, through VHF radio channel 9.

8.2. Maritime Authority

The Maritime Authority to which the Terminal is subordinate is the Capitania dos Portos da Amazônia Oriental.

Ships coming from areas considered endemic will be visited at the anchorage, before berthing. In other situations, the ships will be visited, when they are berthed, by Port Health, Customs - when there is imported cargo - and the Federal Police - when it is a foreign ship.

It is the responsibility of the Maritime Authority to determine the actions and to prosecute those responsible for any incident within the limits of the port.

8.3. Pilotage

Pilotage is mandatory in all ports and terminals for oil tankers, propanes and explosive cargo carriers with a gross tonnage greater than 2000.

- Espadarte Channel – Compulsory use of pilotage for all ships up to the maximum draft of 11.0m.

- Quiriri Channel – Compulsory pilotage use for ships with drafts greater than 12.2m and optional for ships with drafts up to 12.2m. The maximum authorized dynamic draft is 13.8 m*. ordinance agreement in force*.

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- Mosqueiro Channel, Tapanã bar, Jararaquinha and Guajará Bay – Pilotage is mandatory for all ships. The maximum draft will be the same as allowed for the terminal or anchorage demanding.

Note: Transport of dangerous cargo – the use of pilotage is mandatory for all ships carrying dangerous cargo regardless of the access channel used and the draft. *Observe the recommendations of Item 6.1.6 of this NPCP-AOR

8.4. Tugboats and other Marine Services

It is mandatory to use a tugboat for berthing and unberthing at the port of Miramar and two tugboats for berthing and unberthing maneuvers at the Miramar Ponte Nova Terminal (pier 200).

TA-BELÉM does not have a speedboat service. The agent shall provide such service through existing service providers in the port. The following is a list of some vessels and their particulars, which provide cable mooring and crew transport services in the port:

Mooring and Crew Transportation Services							
Owner	**Name**	**Length (m)**	**Axes**	**Power (HP)**	**Bollard pull**	**Approved by Transpetro**	**Notes**
Amarena	Amarena II	9	1	130	*	Yes	Transp. Passenger and cargo
Amarena	Amarena III	10	1	130	*	Yes	Transp. Passenger and cargo
Amarena	Celebrate	14	1	155	*	Yes	Transp. Passenger and cargo
Amarena	Novilho	10	1	103	*	Yes	Transp. Passenger and cargo
Amarena	Zenith	11	1	155	*	Yes	Transp. Passenger and cargo

* Information not provided by the company.

8.5. Other Tanker Terminals

The Outeiro Port Terminal is an extension of the organized port of Belem, located in Ponta do Redentor, on the river island of Caratateua or Outeiro district of Belem, State of Pará, in the Guajará-Açú river estuary, on the right bank of Guajará bay at a river distance of 19 km from the Port of Belem.
The geographical coordinates of the Outeiro terminal are as follows:

DATUM: WGS-84	TERMINAL
Latitude S	01º 16’40.8”
Longitude W	048º29’39.0”

Facilities

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The Outeiro Port Terminal covers a **territorial area of 313,826.24 m²**. Its territory consists of paved and lighted traffic lanes available for use for cargo handling.

Coasting structures: it has two coasting facilities (piers), interconnected to a single access bridge, all made of reinforced concrete, with precast reinforced concrete piles in its infrastructure.

Pier 100 – Ships: built at the end of the access bridge, in the shape of an "L", it has two berths 101 and 102 to receive ships of up to 40,000 DWT and 16,000 TPB, respectively, being intended to carry out operations with general cargo and solid bulk. The pier was designed for 4.0 t/m² overload, mooring bollards with capacity for 100 t and 60 t installed in berths 101 and 102, respectively.

Pier 200 – Barges: built in the intermediate section of the access bridge and parallel to pier 100, it has two moorign berths 201 and 202 to receive vessels of up to 2,700 DWT, intended for operations with general cargo and solid bulk. The pier is designed for overload of 2.5 t/m², mooring bollards with capacity for 25 t installed in the berths.

Storage

Warehouse: consisting of seven semi-detached sheds measuring 21.50 m x 105.00 m, making a total built area of19,560m ², load capacity of approximately 300 t and stem height equal to 3.10 m. The facade of the six central sheds consists of an increase in the area covered with the same type of construction for the loading and unloading area, equipped with an elevated platform and access for trailers, with approximately 1,500m². Inside the warehouse are two three storey administrative buildings measuring 10.00 m x 37.50 m and 10.00 m x 16.00 m, with total areas of 480m² and 1.125m² each.

Storage Yards 03, 04, 05 and 06: rectangular areas with 10,200m ² each, are located in sequence to the warehouse, with a distance of 24.50 m and 14.50 between them.

Storage Yards 02 and 01: rectangular areas with 9,800m ² each, are located in sequence to warehouse No. 03, with a distance of 14.20m, which is laterally set back 12.50m in relation to the alignment of the other areas.

Load Handling

The Outeiro Port Terminal has its vocation focused on the operation with solid bulk and general cargo. The terminal also carries out cargo transhipment operations in support of the Port of Belem in accordance with the Regulation on the Operation of Ports-REP.

The river access to the SOTAVE terminal is the same as the port of Belem and the Miramar Terminal, through the Mosqueiro Canal, where the minimum depths recorded are around 10.7m, as can be seen in DHN Nautical Chart No. 316, with depths on the order of 7.8m to 9.0m and with some locations with 6.7m. The depths in front of the berth of ships of Pier II Terminal, as seen in the nautical chart, measure above 12.0m to 13.0m, in a parallel range of 2.0km in length by about 1km in width.

Road access is through the municipal road BL-010, with a distance of approximately 38km from the port of Belem.

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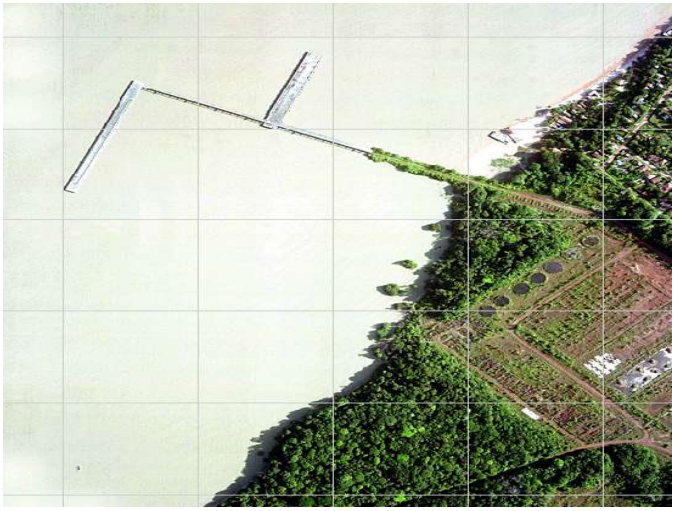

Outeiro Terminal (formerly SOTAVE).

9. EMERGENCY PLANNING AND COMBAT

9.1. Emergency Contacts

The table below indicates the essential contacts with the telephone number, fax, and radio channels/frequencies.

Organization	Operating Hours	ID acronym	Phone	Phone number	VHF Call
Capitania dos Portos da Amazônia Oriental	24 hours	CPAOR	3218-3950		16
Port Control	24 hours	CDP	3213-6606		16
Association of Practitioners	24 hours	---	4006-6550		6/11
Pier 1 operator's guardhouse	When operating	P-1	32116750		09
Pier 2 operator's guardhouse	When operating	P-2	32116781		09
Control Room	24 hours	---	3211-6725		09/16
Maintenance - Supervision	08 to 17h	---	3211-6703		09
Maintenance -Overwarning	24 hours	TA-BELÉM			---
Fire Department - Miramar	24 hours	1st GBS	3251-3919		---
State Civil Defense	24 hours	---	190		---
Medical Sector	8 am to 5 pm	---			---
SEMAS	8 am to 5 pm	---	3184-3330		----
IBAMA	8 am to 5 pm	IBAMA	3210-4706	---	---
City Hall of Belem – Gab. Mayor	8 am to 5 pm	PMB	3114-1003	---	---

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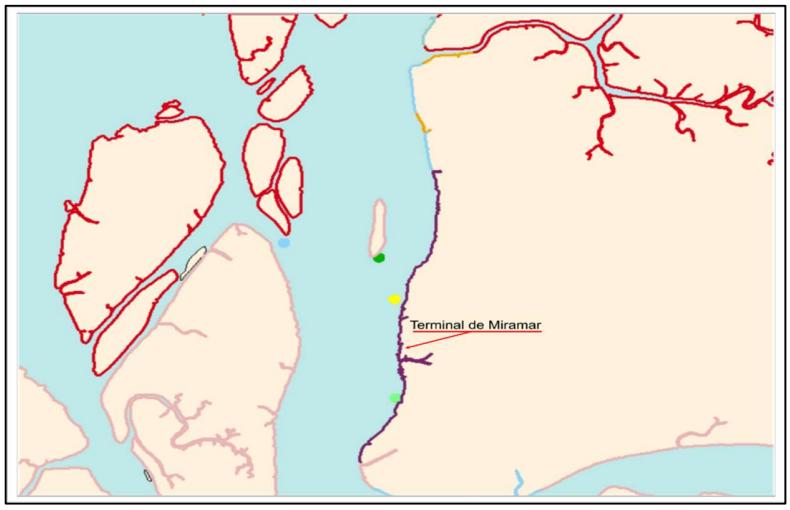
9.2. Sensitive Areas for the Environment

The map below shows the region of the Port of Belem with coastal sensitivity areas near the Miramar Terminal.



Brazilian laws are quite strict regarding water pollution along the coast. It is forbidden to release into river waters and into the sea any type of material, debris, garbage, oil or polluting substance. Heavy fines will be imposed on offenders by the maritime authorities, in addition to imprisonment provided for by law. It is the strict responsibility of ship commanders to ensure that no contaminated oil or water will be pumped or spilled from their ship.

Ship commander must inform the Port Authority and the Port Authority (CDP) of the occurrence of any spillage of polluting substances in the Miramar terminal area.

Pollution can be classified as a crime by Brazilian legislation, according to Law 9,605 of February 12, 1998, which provides for criminal and administrative sanctions derived from conduct and activities harmful to the environment, both for the one who pollutes and for the one who failed to prevent them

9.3. General Description of the Emergency Combat Organization

The following table lists the Organizations responsible for dealing with possible emergencies involving vessels arriving at the Terminal.

INCIDENTS WITHIN THE AREA PORT OF BELÉM /MIRAMAR TERMINAL					
Type of Incident	**Responsible Organization**	**Other Organizations Involved**			
Collision in the Channel	Port authority	Civil defense	TRANSPETRO		
Vessel beaching	Port Authority	Civil defense	TRANSPETRO		
Collision in the Berth	Port authority	TRANSPETRO	Civil Defense		

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Sinking of vessel	Port Authority	Civil defense	Fire Department	TRANSPETRO	
Fire in the Vessel	Ship	TRANSPETRO	Fire Department	Civil defense	Port authority
Berth Fire	CDP	TRANSPETRO	Fire Department	Civil defense	Port authority
Pollution	TRANSPETRO / Ship / CDP	Port Authority	CDP	IBAMA	CDA

9.4. Contingency Plans

The PCL (Local Contingency Plan) is TA-BELÉM's plan to control and extinguish emergency situations in all its facilities. It is available in all the operational areas, on frames located at the entrances of the rooms for operation, maintenance, and administrative buildings. The party responsible for updating it is the local HSE (activity of health, envionment, and safet).

A minimum contingent of crew members capable of safely carrying out loading and unloading operations and acting in an emergency shall be kept on board the ship, including unberthing the ship if necessary.

Emergency and fire-fighting equipment must be kept ready for use while the ship remains berthed. The operating fire hoses must be extended, one forward and one aft of the load taps.

A pollution control kit (rags, shovels, buckets, squeegees, transfer pumps, etc.) must be kept ready for use in the event of an oil spill. Supplementary precautions must be taken with the goal of avoiding pollution in the sea by oil.

TA-BELÉM has an Emergency Response Center (CRE) which is equipped with modern equipment and various facilities for use in accidental pollution. Periodically, intensive training is carried out, which trains terminal employees to act in accordance with the PCL. Located at a strategic point, in CDP's facilities, it allows for quick action to combat emergencies. The warehouse is stockpiled with containment barriers,oil collectors and other equipment and materials necessary for the leaks. Work, support, tanker and oil collecting vessels are berthed at the pier in a permanent state of readiness.

In TA-Belem, the relief of injured persons will be in charge of the group of injured persons (rescuers) to apply first aid to employees who are victims of accidents with injuries.

The rescue of the injured will be carried out by car to the Port of Belem, where the Fire Department of the Miramar terminal is located, and then the ambulance of the Fire Department will be activated, which will take the injured to the nearest emergency department.

9.5. Public Emergency Combat Resources

In the port of Belem, TRANSPETRO, through TA-Belem, has resources that can be used to mitigate pollution events in the river. For other emergencies, public organizations offer resources as intended.

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9.5.1. Port Administrator

CDP – Companhia Docas do Pará, has a fire fighting system with two pumps on pier 2.

9.5.2. Maritime Authority

The Capitania dos Portos da Amazônia Oriental has, at the Val-de-Cães Naval Base, 09 speedboats and 1 pusher to combat pollution in the river.

9.5.3 Local Emergency Services

The Fire Department, Civil Defense, Military Police and medical services are called according to the table in section 9.1.

9.5.4 State and National Combat Organizations

The following plans may be triggered depending on the type of emergency, as established in the PCL/Belem:

- PCR – Regional Contingency Plan, which involves the regional bodies of Petrobras.
- PGR I - AMAZON PLAN – Regional Contingency Plan, which involves all the Organs of Petrobras, in the Amazon Region.

9.5.5. Mutual Support Plans

The institutions listed below participate in the PAM (Mutual Aid Plan) and their resources are available as previously agreed in this plan:

- Transpetro/TA-BELÉM
- Fire Department of Pará
- Companhias Doca do Pará – CDP
- Environmental Defense Center - CDA
- Petróleo Sabbá S/A
- Esso
- BR – Distribuidora
- Ipiranga
- Texaco
- Paragás
- Liquigás
- Minasgás
- Capitania dos Portos da Amazônia Oriental
- Grupamento Naval do Norte
- Military Police
- State Civil Defense
- Petro Amazon
- Reicon Navigation
- Transdourada Transportes
- Rodopar
- Transpal
- Bar Pilotage

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9.6. Combating Oil Spillage

The sub-items below describe the resources available to combat pollution in the areas adjacent to the terminal.

9.6.1 Combat Capability of the Terminal

The resources available at the terminal to combat oil spill situations are listed in the PEL, which is available in all administrative, operational and maintenance areas of TA-BELÉM.

9.6.2 Combat Capability of the Environmental Agency

The State Secretariat of Science Technology and Environment (SECTAM) does not have resources to combat oil spills at sea.

9.6.3 Resources available in the 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. Combat of Tier 2

Combat significant pollution. For these events, the regional resources of Transpetro / Petrobras are requested. These features, their readiness and how to trigger them, are described in PCL / BELÉM.

Tier 3 Combat

Combating great pollution. In these events, national resources from TRANSPETRO and PETROBRAS are requested. These features, their readiness and how to trigger them, are described in PCL / BELÉM.

9.6.5. Combat a Major Incident

TA-BELÉM's PCL lists the actions and responsible parties for each type of expected event, which may occur within its unit, pipeline range, or vessels, and which involves third parties. For events that are not provided for in this document, TRANSPETRO and PETROBRAS will make available all national or international resources that are within their reach.

10. CONTACTS

10.1. Terminal

Location	Contact	Phone	Fax	VHF/UHF Channels	
				Highlight	Conversation
Pier 1	Operator	3211-6750	----	09	06 or 09
Pier 2	Operator	3211-6781	----	09	06 or 09
Control Room	Operator	3211-6725	-----	09	06 or 09

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Supervision Room	Supervisor	3211-6703	----	09	06 or 09
Shop	Supervisor	3211-6743	----	----	----
Coordination of TA-BELÉM	Coordinator	3211-6701	211-6745	----	----
Security (HSE)	Safety technician	3211-6740	----	09	6 or 9
Ordinance	Guard	3211-6736	----	----	----
Administration Port - CDP	Supervisor	3213-6606	257-1900	16	6 or 9
Secretary of TA-BELÉM	Secretary	3211-6702	211-6745	----	----

10.2. Port Services

Organization	Contact	Phone	Fax	E-mail	VHF/UHF Channels	
					Highlight	Conversation
Capitania dos Portos da Amazonia Oriental	Watchkeeper	3218-3950	242-7690	secom@cpaor.mar.mil.br	16	09.12, 14
Association of Practitioners	Branch	4006-6550	241-4372	secretaria@pratbel.com.br	16	06 or 11
Port Authority	On Duty	3213-6606	257-1900	kzan@cdp.com.br	16	09

10.3. Navigation Agents and Selected Suppliers

COMPANY	ACTIVITY	Phone	Fax	E-mail	VHF/UHF Channels	
					Call	Verbal
Transpetro	Agente	(91) 9292-8639	-	Operations.bel@munizagmar.com.br agents@munizagmar.com.br	16	09
Val-de-Cães Naval Base	Large-Scale Naval Repairs	216-4326	216-4254	bnvc@canal13.com.br	16	09
Amarena	Mooring and Crew Transportation	230-1860	230-1860	amarenaportuarioltda@bol.com.br	16	09,14,65
Expresso Mercantil	Agente	212-4822	223-4353	-	-	-
Wison Sons	Agente	4009-0050	4009-0051	opebe@wilsonsons.com.br	-	-

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10.4 - Local Authorities, State and National Agencies

In the table in section 9.1. There is a list of these authorities and their respective contacts.

10.5 - Emergency Combat Organizations

The emergency combat organizations available at the port are listed in section 9.1.

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Note: All information in this document was obtained through the website, Publications, Ordinances, Standards, etc.

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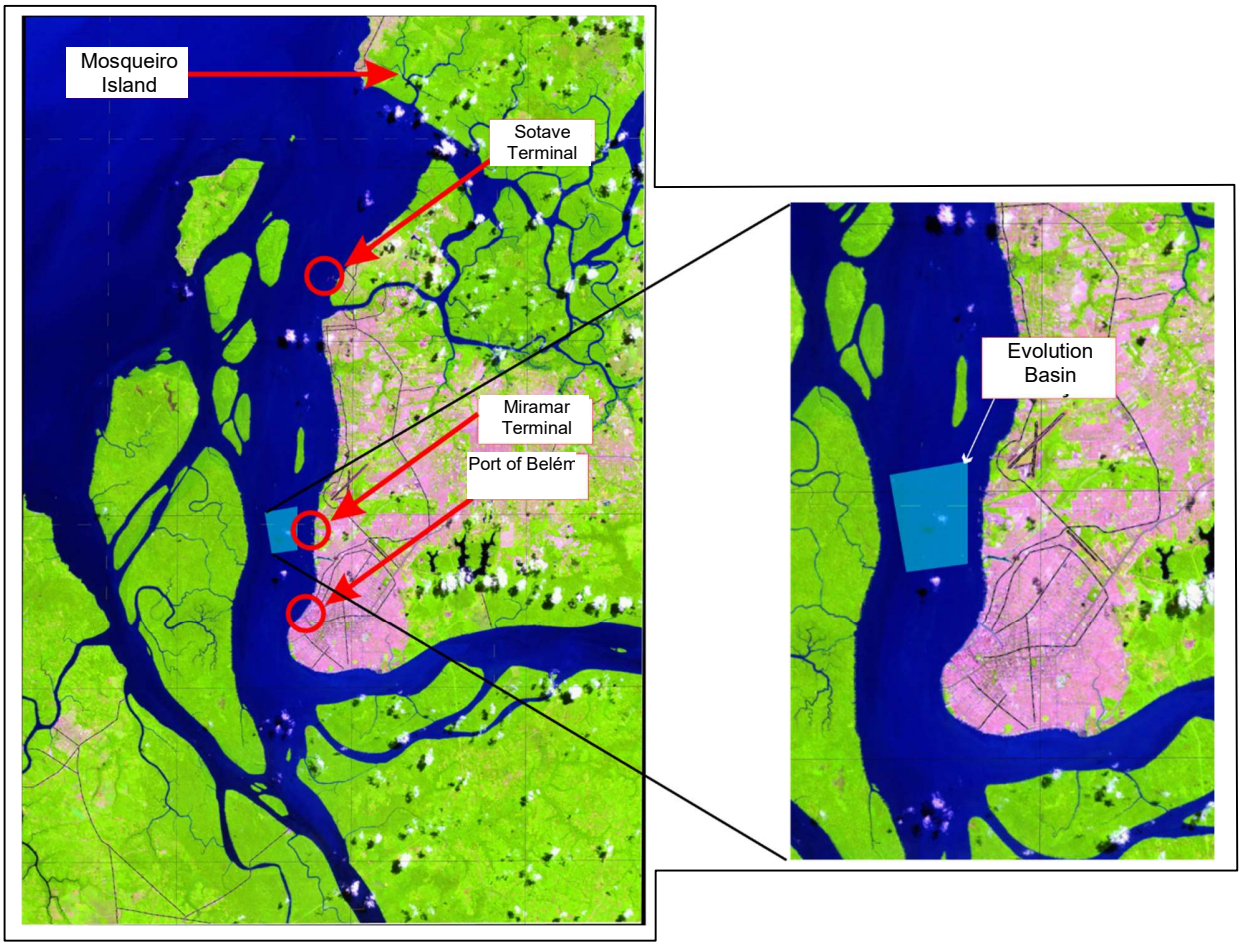
APPENDIX A - APPROACH, EVOLUTION BASIN AND BERTHS



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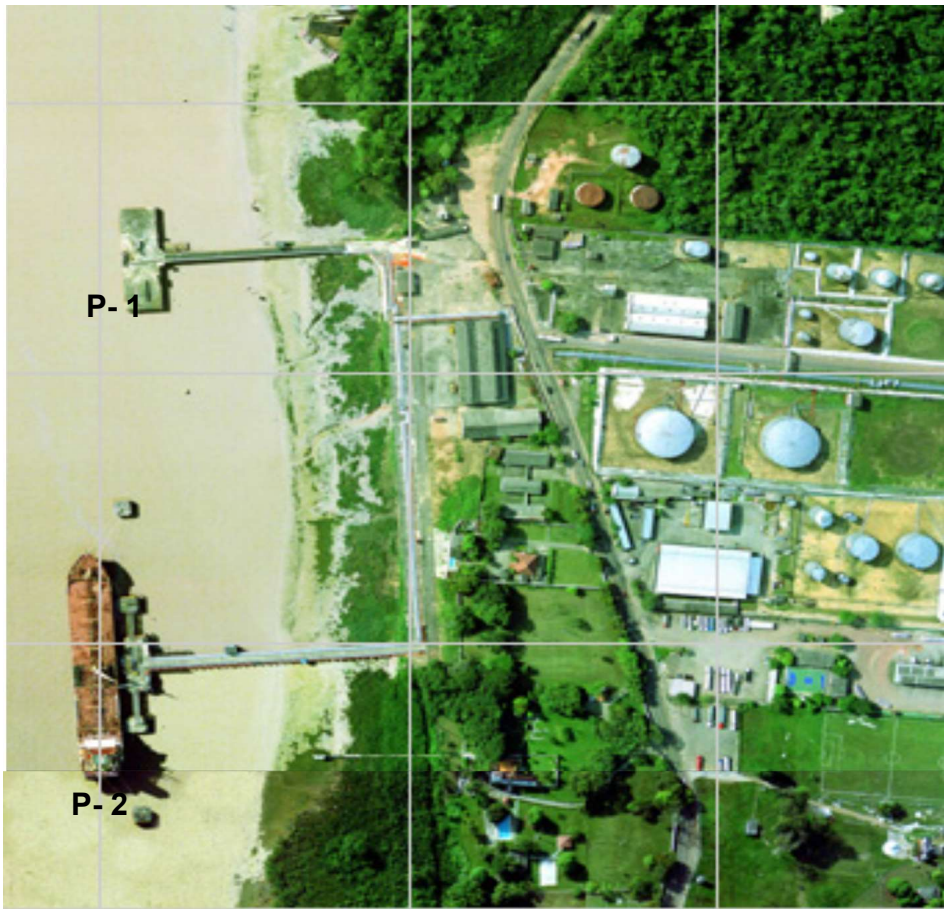
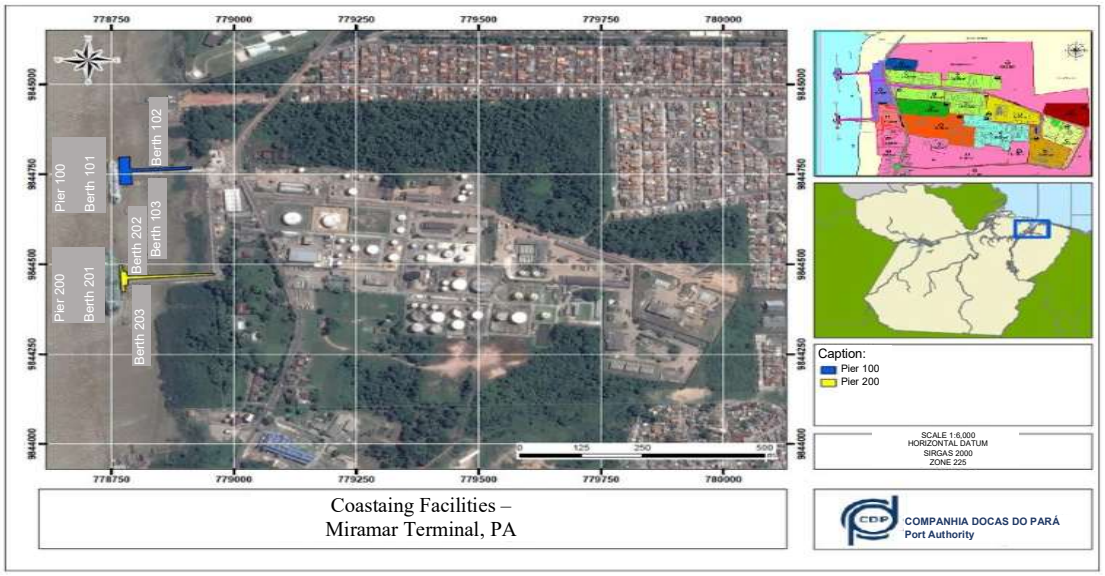


COASTING



SOURCE: TDZ, 2017

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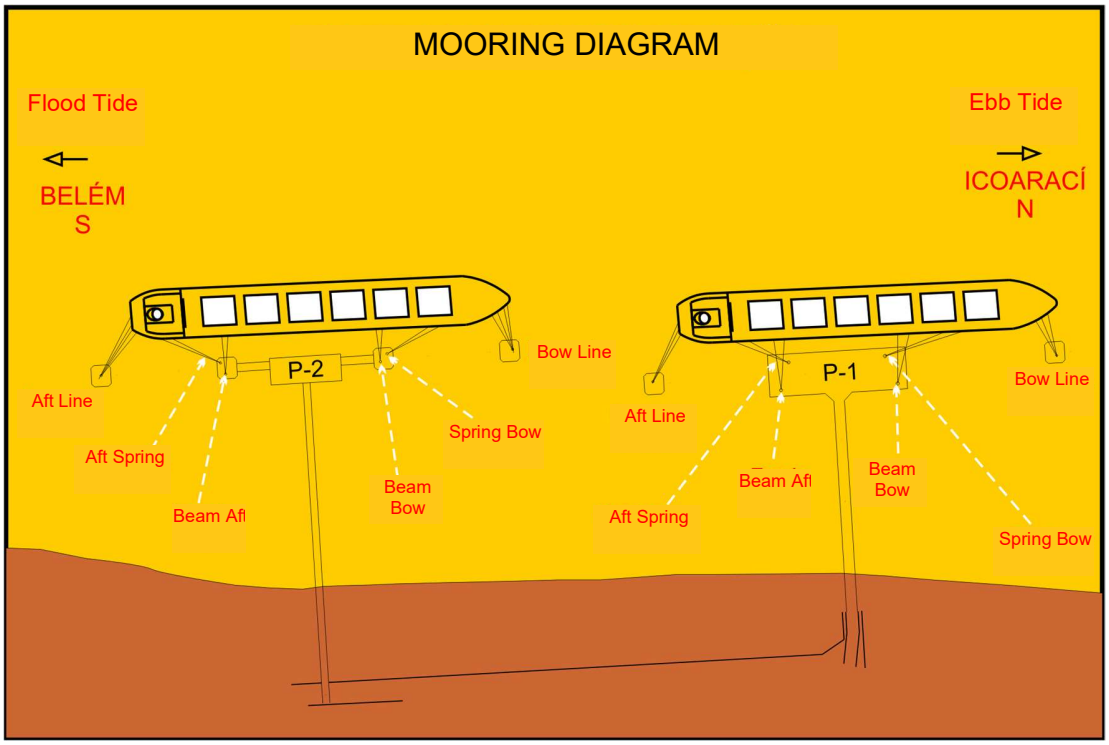
APPENDIX B - Mooring point diagram.



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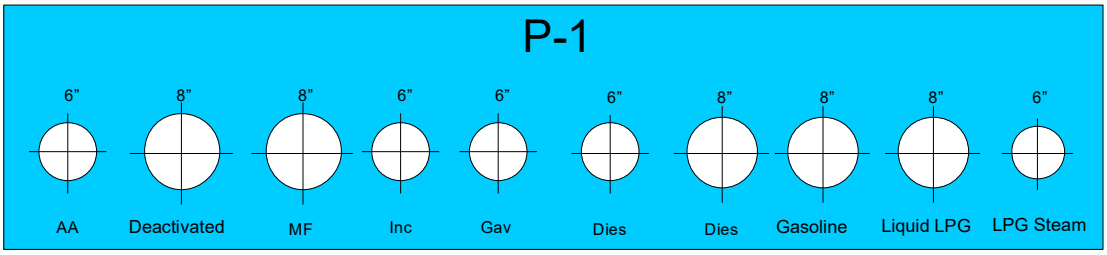
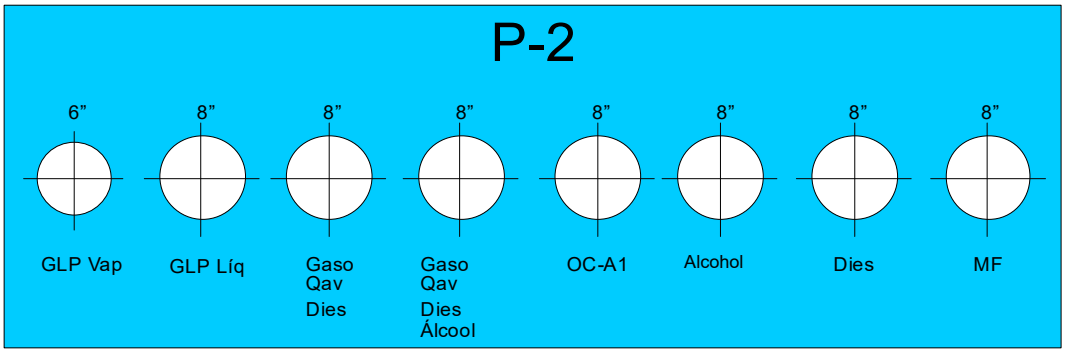
APPENDIX C - Distribution of loading/unloading sockets in each berth
(on board view)





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APPENDIX D - Vessel Essential Information for Terminal

REQUESTING INFORMATION ABOUT THE VESSEL		
Ship's name: Flag: Commander's name : Shipowners:		Estimated Time of Arrival (ETA): Last Port: Next Port: Agents:
Does the ship have an inert gas system? Oxygen content:		
Length Overall (LOA): Length Between Perpendiculars: Breadth:		Arrival Draft: Maximum Draft During Transfer: Output Draft:
Number of engines: Number of propellers:	Transverse Propulsion: Bow (No. & power) Aft (No. & power)	Tugboats - minimum required: (No. & static pull (bollard pull)
Number and size of manifold flanges: Cargo Ballast Bunker	Distances: Bow to Manifold Against the Manifold Manifold Height to Main Deck	
LOAD PROGRAMMING (fill in what applies)		
Nomination: Type & quantity Type & quantity Type & quantity	Discharge of ballast overboard: Quantity: Estimated time:	Slop / ballast discharge to land: Quantity: Estimated time:
Requested supplies (bunkers)		
Type & quantity		Type & quantity
Additional information (if any):		
Please fax or e-mail to the Terminal Supervisor, Fax No. .....E mail.....		

APPENDIX E (Information to be exchanged before load transfer)

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(a) Name of ship
(b) Trip Number:
(c) Berthing:
(d) Date of berthing:
(e) Contract data:
- Number of pumps on board:
- Volumetric capacity 98%:
- Guaranteed pressure at discharge: (When it is a discharge operation)
- Capacity of simultaneous ballast/desalternation with loading/unloading

(f) travel information
- Type of charter (VCP, TCP, COA, etc)
- Type of trip (Cabotage/Long Haul)
- Ports or places of origin and destination

(g) Ship Requested supply?
(h) Means of communication between ship and terminal
(i) cargo information
- Product:
- Quantity:
- Temperature:
- API

(j) SLOP:
- Quantity
- Temperature,
- API
- Fluidity,
- Source
- Contaminants.

(k) Ballast:
- (Dirty Ballast) Quantity, Temperature.
- (Segregated Ballast) Quantity:

(l) Operation information
- For downloads:
  - Ship will do special operation? (COW, Inertization, etc.) (operations not allowed when the ship is berthed)
  - Estimated time for the special operation
  - Time required to stop the pumps
- For Loads:

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- Time in advance for TOP notice
- Flow for the TOP period
- Amount of ballast to be unloaded
- Maximum flow allowed for deballasting

- Are there restrictions on electrostatic properties? Yes. Connections must take into account the discontinuity of at least one oversleeves in each mooring line or the Manifold has an insulating flange
- Are there restrictions on the use of self-closing valves? No. As long as it is monitored remotely

- Ship / Terminal Conditions for loading/unloading by product
  - Ship - Pressure, Flow, Temperature (Max. and Min.)
  - Terminal - Pressure, Flow, Temperature (Max. and Min)
- Sequence of operations by product
- Quantity to be loaded/unloaded
- Tanks of Origin / Destination
- On board lines / land
- Loading arms / oversleeves used
- Forecast for start and end of operation

(m)Additional information about operation and safety.

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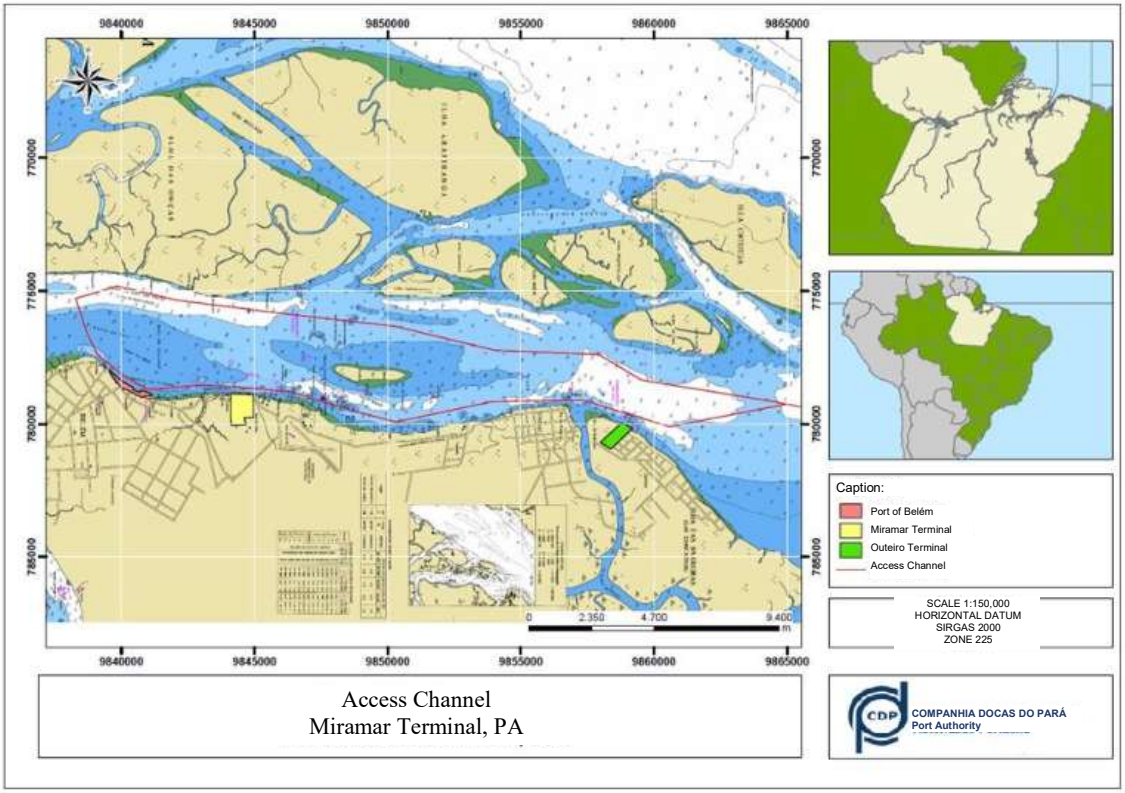

SOURCE: PDZ, 2017.

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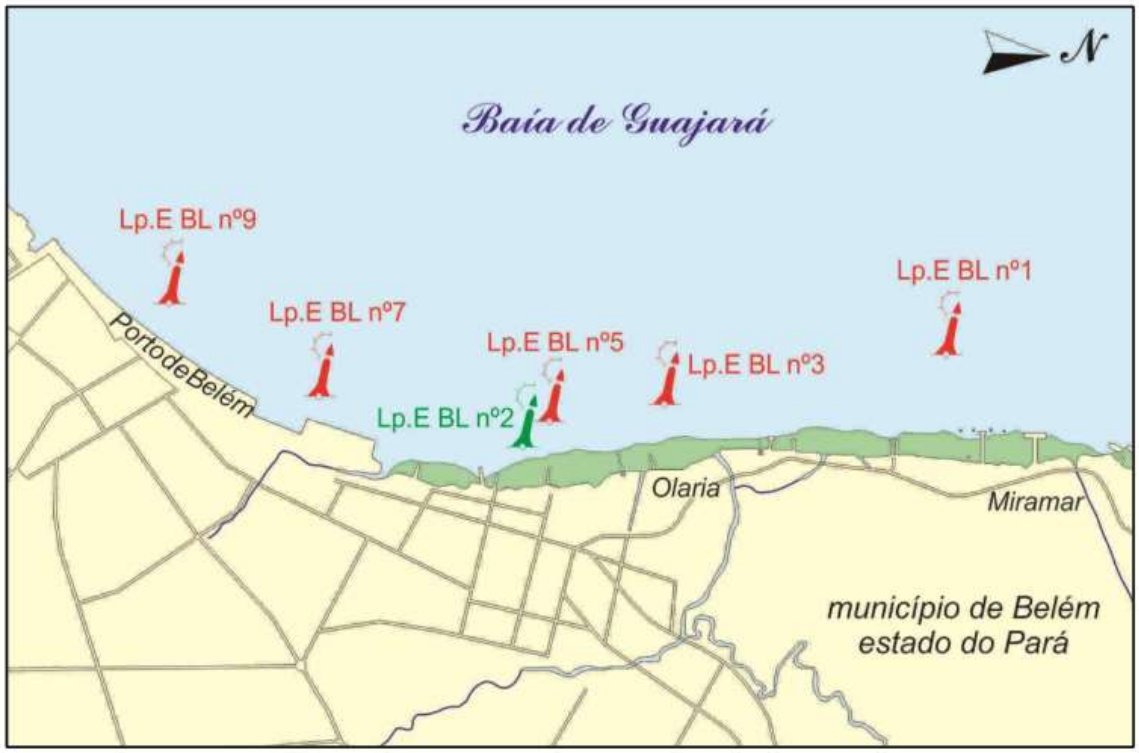
BEACONING – IN THE PORT OF BELÉM



SOURCE: PDZ, 2017.

Port of B