TRANSPETRO

PORT INFORMATION

PORT OF ITAQUI

Taselis – the São Luis water transportation terminal

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1.
INTRODUCTION

This port information document was prepared and reviewed by Petrobras Transporte S.A. (TRANSPETRO), who runs the operations of the São Luis Water Transportation Terminal, at the Port of Itaqui. It contains essential information for the vessels operating at the port. This document is available in English and Portuguese and distributed to organization's personnel, to interested parties at the port and to local and national authorities.

The information herein not intended to replace or amend any local or international officially established legislation, instruction, guideline or publication. Therefore, nothing contrary to any items in the abovementioned documents must be considered.

The terminal has the right to, without prior notice, change any of its operational characteristics mentioned herein.

In the event any of the information in this document is no longer in effect, or needs to be updated, please contact:

TERMINAL DE SÃO LUIS

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Phone: +55 21 3211-9072
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The most updated version of this Port Information document can be found at:

www.transpetro.com.br

2.
DEFINITIONS

BP – Bollard Pull

CAP (Capitania dos Portos do Maranhão) – Port Authority in the State of Maranhão

CBR (Companhia Brasileira de Rebocadores) – Brazilian Tugboat Services Company

CDA (Centro de Defesa Ambiental) – Environmental Defense Center

COW – Crude Oil Washing

CRE (Centro de Resposta de Emergência) – Emergency Response Center

DHN - Directorate of Hydrography and Navigation

DWT – Tons Deadweight

EHS – Environment, Occupational Health and Safety

EMAP (Empresa Maranhense de Administração Portuária) – Port Authority in Itaqui

ETA – Estimated Time of Arrival

GEC (Grupo Especial de Contingências) – Special Contingency Group (SCG)

GIAONT – Operational Inspection and Monitoring Group for Ships and Terminals

HT – High Tide, King Spring Tide, High Waters

IBAMA – Brazilian Institute of Environment and Renewable Natural Resources

IMO – International Maritime Organization

ISGOTT – International Safety Guide for Oil Tankers and Terminals.

LPG – Liquefied Petroleum Gas

LW – Low Waters

MA – State of Maranhão

MBL – Minimum brake loading

MF – Marine Fuel

MGO – Marine Gasoil

Neap Tide – The tide's range is at its maximum at a certain time of the year

PCL – Local Contingency Plan

PETROBRAS – Petróleo Brasileiro S.A.

POB – Pilot on Board

SEMA – State Department of Environmental Protection

SINPEP – Petrobras Integrated Electronic Standardization System

SISCOPE – Operation and Laytime Control System

Spring Tide – The tide's range is at its maximum at a certain time of the year.

SQUAT Effect – The increase of a ship's draft due to the increase of its speed, mainly in restricted waters.

TA-SELIS – São Luis Water Transportation Terminal

TRANSPETRO – Petrobras Transportes S.A.

UN-Bunker – Bunker Trading Department at Petrobras (MF and MGO)

UTC – Universal Time Control

VLSFO – Very Low Surfer Fuel Oil

VTS - Vessel Traffic Service

3.

NAUTICAL CHARTS AND REFERENCE DOCUMENTS

Information about the Port of Itaqui can be found in the following publications by Marinha do Brasil (Brazilian Navy).

NAUTICAL CHARTS (DHN)

Area	Chart Number
	Brazil (DHN)
From Cape Gurupi to Santana Island	400
The Surroundings of Saint Marcos Bay	410
Saint Marcos Bay	411
The Surroundings of Ports São Luis and Itaqui	412
Port of Itaqui	413

OTHER PUBLICATIONS

Type/Topic	Editor or Source		
	Brazil (DHN)	Brazil (DHN)	British Admiralty
Port Authority Standards and Procedures in the State of Maranhão	NPCP-Ma		
East Coast Navigation Support	East Coast Plan		
List of Brazil's Lighthouses	DHN		
From Oiapoque Bay to Parnaíba River	DHN		
From Santana Island to Camocim	DHN	24020	
From Cape Gurupi to Santana Island	DHN	24260	
São Marcos Bay	DHN	24270	
British Admiralty Chart		24271	3958
British Admiralty Chart			535
Guide to Port Entry – ed. 2019/20 Shipping Guide			

4.
PORT DESCRIPTION

4.1 GENERAL DESCRIPTION

TA/SELIS is located at Port of Itaqui, near the city of São Luis (MA), and operated by Petrobras Transporte S.A. – TRANSPETRO.

The terminal receives, stores and distributes oil products and liquefied petroleum gas (LPG), renders labor services in the Storage and Transfer operations of oil products to the distributors at the Port. Additionally, the terminal also provides Bunker services to vessels and tugboats at Port of Itaqui and train cargo operations. In addition, TA/SELIS is used as export and cabotage warehouse for smaller terminals, with influence over the states of Maranhão, Piauí, Tocantins, the southwest of Pará, north of Goiás and northeast of Mato Grosso.

4.2 LOCATION

4.2.1 Coordinates

The terminal is located at:

02º35'12"S e 044º23'30''W.

4.2.2 General geographical location

The São Luis Water Transportation Terminal – TA/SELIS is located by São Marcos Bay, in the State of Maranhão, at the northern/northeastern coast of Brazil, 11 km to the west of the city of São Luis. The terminal is connected to the city by road.

4.3 4.3TERMINAL APPROACHES

4.3.1 General description

The Port of São Luis is located at a recess of the coast, northwest to the São Luis island, which is formed by the estuary of rivers Anil and Bacanga, at 02°35'00" S 044°22'00"W.

The Port of São Luis accepts all demands, day and night, based on maneuvering and anchorage rules established by the Harbor Master in the State of Maranhão.

When approaching the Port of São Luis from W and E, sailors must approach with bow buoy no. 1 at the entrance of the channel, then swing towards the other buoy pairs which demarcate the channel and, according to the draft of the vessel, to the anchorage areas determined by the Port Authority, or towards buoy pair 19/24 so that a pilot can board the vessel to perform the mooring.

Section 5.3.8 of the East Coast Route (DHN) contains information about the channel's signage, important topics, geographical characteristics and dangers found during the approaching process of the Port of Itaqui.

4.3.2 Anchorage areas

Nature makes anchorage a little harder at São Marcos Bay because the bottom is not the most adequate due to its poor conditions. In addition, the strong currents of high and low waters at the bay, which may reach 6 nots, have caused the loss of iron due to the anchorage of vessels, and this may cause a vessel to run aground on the several sand banks and shallow bottoms of the bay. The Port Authority recommends that captains, when anchoring their vessels, should keep their crews on duty to have the right number of trained personnel to perform emergency maneuvers.

The most favorable time to reach these anchorage areas is about 4 hours prior to the high tide.

Vessels with only 1 (one) anchor, or with faulty machinery, must, at first, use anchorage areas no. 1, 2 or 3.

Vessels using the terminals and ports at São Marcos Bay must follow the specific anchorage areas established in the Directorate of Hydrography and Navigation's Nautical Charts 400.

The following are the anchorage areas designated by the Port Authorities to the Port of Itaqui:

" Anchorage is not allowed in the maneuver area, nor at the entire extention of the port's access channel"

Recommended or Designated Anchorage Areas						
Name	Latitude & Longitude			Anchorage area radius in miles	Minimum depth in meters	Notes
	Points	LAT S	LONG W			
ONE (1)	A	01°58'5	044° 07,0'	12.2 x 3.6	19 x 31	· Ships on dispute · Ships undergoing huge repairs · Ships over 80,000 DWT and draft of more than 11 meters
	B	01°55,5	044°09,0'			
	C	01°49,2'	043°58,4'			
	D	01°51,8'	043°56,5			
TWO (2)	A	02°02,9'	044°03,4'	4.37 x 2.2	31 x 34	For ships with drafts of 20 m or more. Pay close attention to the underwater cables in the west sector of this area.
	B	02°05,4'	044°03,4'			
	C	02°06,0'	044°07,2'			
	D	02°04,4'	044°06,1'			
THREE (3)	A	02°08,3'	044°08,7	4.40 x 1.10	26 x 33	
	B	02°10,9'	044°09,'			
	C	02°12,1'	044°10,0'			
	D	02°12,1'	044°11,0'			
FOUR (4)	A	02°19,2'	044°12,2'	2.18 x 1.15	15 x 38	Ships under 80,000 DWT and/or 11 m of draft
	B	02°21,4	044°09,8			
	C	02°24,4'	044°12,8'			
	D	02°27,4'	044°17,2'			
	E	02°26,6'	044°19,4'			
FIVE (5)	A	02°22,2'	044°20,3'	4.90 x 1.0	14 x 32	
	B	02°25,0'	044°21,3'			
	C	02°24,4'	044°22,2'			
	D	02°20,1'	044°20,4'			

Recommended or Designated Anchorage Areas						
Name of the Area	Latitude & Longitude			Anchorage Area Ratio in Miles	Minimum depth in meters	Notes
	Points	LAT S	LONG W			
SIX (6)	A	02°28,6′	044°24,5′			Note: This anchorage area requires express authorization from the Port Authority and additional precautions, which are, determined when the request to use the area is made.
	B	02°29,2	044°24,0′			Ships with up to 80,000 DWT and/or an eleven-meter (11 m) minimum draft
	C	02°30,6′	044°25,4′			
	D	02°29,6′	044°26,0′			
SEVEN (7)	A	02°33,6′	044°25,0′			Ships with up to 80,000 DWT and/or a draft of no more than 11 m
	B	02°34,0′	044°23,6′			Note: This anchorage area requires express authorization from the Port Authority and additional precautions, which are, determined when the request to use the area is made.
	C	02°35,5′	044°24,3′			
	D	02°34,8′	044°25,7′			
EIGHT (8)	A	02°35,4′	044°26,0′			Loading and unloading fuel and explosives
	B	02°34,8′	044°25,7′			
	C	02°35,5′	044°24,3′			
	D	02°36,8′	044°24,8′			

Notes: Other areas on the channel can only be used if authorized by the Port Authority.

Piloting and Navigation agencies keep Port Authorities informed about the anchorage areas where the ships mentioned can be found.

4.3.3 Navigation Aids

Nautical signaling for the Port of Itaqui and adjacent terminals Ponta da Madeira e Alumar is made based on lighthouses and lighted buoys.

4.3.3.1 Lighthouses

The following lighthouses can be found at São Marcos Bay and surrounding areas: Apeú, São João, Mangunça, Pirajuba, Pirarema, Alcântara, Ilha do Medo, Ponta da Areia, São Marcos, Araçagi and Santana.

4.3.3.2 Lighted buoys

The access channel, turning basin and anchorage areas are marked by lighted buoys, being six of them equipped with radar reflectors. The Brazilian Navy publishes the characteristics of the nautical signaling of the Itaqui area on its list of lighthouses – (DHN).

4.3.4 Port limits

The area of the Organized Port of Itaqui is set forth in Ordinance No. 238, from May 5, 1994, issued by the Ministry of Transportation, and it is constituted by:

- a) the port ground facilities delimited by the polygonal defined by vertices A, F, G, 6, H, J, L and C, with UTM coordinates as indicated below:

POINT	COORDINATE X	COORDINATE Y
A	569.463,723	9.716.244,655
F	570.804,613	9.716.841,685
G	571.437,291	9.715.973,294
6	570.689,926	9.715.165,913
H	571.460,874	9.710.563,814
J	570.859,257	9.710.463,028
L	570.034,806	9.715.384,435
C	569.719,675	9.715.669,811

The polygon includes the entire dock, berthing and mooring piers, warehouses, buildings in general and internal pathways for roads and railways. It also includes all land surrounding these and adjacent areas belonging to the Federal Government, be them an asset of the Port of Itaqui, or not, or which are under its care and responsibility.

- b) the maritime infrastructure, contained within the polygonal ABCD defined by the vertices with the following geographical coordinates:

POINT	LATITUDE	LONGITUDE
A	02°37'00'' s	44°23'00'' w
B	02°34'15'' s	44°23'00'' w
C	02°34'15'' s	44°22'00'' w
D	02°37'00'' s	44°22'00'' w

The polygonal includes waterways, anchorage areas, turning basin, main access channel and adjacent areas, up to the border of the ground facilities of the Organized Port of Itaqui.

4.3.5 Port Control or VTS

EMAP and Port Authorities are responsible for Port control.

EMAP - Phone: +55 98 3216-6000 Fax: +55 98 3232-4758 – CEP (ZIP CODE) 65085-370.

VTS – Vessel Traffic System – Resource not available to the Port Complex of Itaqui.

4.3.6 Pilotage

Piloting is mandatory to all ships going to the Port of Itaqui, within port area or not.

Pilots can be requested via vessel's Agency with a minimum notice of 4 (four) hours prior to arrival. They can also be requested via VHF channel 16 or 14.

For unmooring procedures, Piloting is requested by the Agency according to the operation's end time expectancy provided by the Terminal or the Ship.

The time for the Pilot to board the ship needs to follow the set forth at the "Normas para Manobras do Complexo Portuário da Baía de São Marcos" [Rules for Ship Maneuvering in the São Marcos Bay Port Complex], updated by the CPMA – Port Authority in the State of Maranhão, via Ordinances found at: www.marinha.mil.br/om/capitania-dos-portos-do-maranhao

4.3.6.1 Pilot onboarding

The area for the pilot to embark and disembark the ship is defined as 1.2 miles West of the Medo Island lighthouse or any other indicated in nautical chart DHN 412.

4.3.6.2 Responsibility for the maneuver

The captain of the vessel is the only one responsible for the maneuvers. It is the captain who has to give all relevant information to the pilot on any details, specific conditions or complications, such as: faulty machinery equipment, problems or damages to navigation aid instruments, mooring lines, or any element that may affect the safety of the mooring or unmooring procedures, as well as loading and unloading operations.

After the mooring is completed, the ships must be safely berthed and positioned to perform all operations without any risks to individuals, equipment and the environment.

In the event the Captain does not accept the pilot's instructions, to ensure the safety of the ship's maneuver, the Port Captain must, through the ship's agency, be informed in writing. This may also be reported to the Terminal by the ship's agency.

4.3.7 Tug and port services

Available tug services are arranged by the ship's agency, according to the Maneuvering Rules approved by the CPMA - Port Authority of the State of Maranhão in ordinances. These ordinances detail the rules regarding the number of tugboats to be used.

Tugboats and tug services to be used in mooring, unmooring and turning maneuvers at the Port of Itaqui are provided by specialized companies.

The Rules/Standards for the use of tugboats are established in the "Normas e Procedimentos da Capitania dos Portos do Maranhão – NPCP-Ma [Rules for Ship Maneuvering in the São Marcos Bay Port Complex], which can be acquired at the Port Authority or by contacting the Agent directly. It is also available to be acquired via the internet, at the Port Authority's website.

The ships must have good quality mooring cables, which must be in good conditions and enough quantity to provide the ship with a safe mooring. The tugboats do not provide cables for these maneuvers.

The tugboats available in São Luis are equipped with fire-fighting equipment.

All tugboats available are listed in item 8.4.2, and this list may eventually be changed according to emergency or scheduled repair needs. Piloting and Navigation Agencies are always updated about this availability.

Communication between tugboats and ships during mooring and unmooring maneuvers is done via VHF radio and through channels defined by the Piloting and Port Authority. This equipment is always turned on in order to answer any calls from ships berthed at the pier or from the terminal's operations team. Alternatively, in case of a communication equipment malfunction during the maneuver, the ships must use internationally known regulated whistle blows used for this purpose.

4.3.7.1 Boat services

a) **Boats for personnel transportation** – boat services are usually carried out on the pilots' boat. If needed, the service may be requested to the ship's agent in advance.

b) **Piloting Boat** – The pilot uses the pilotage boat provided by the Port of Itaqui.

c) **Boats for the delivery of supplies** – Several companies provide the transportation of various materials to the ships anchored, and their services can be requested with due advance notice to the ship's agency. TRANSPETRO does recommend this practice due to the meteorological conditions at the São Marcos Bay which make them unsafe. It is advisable for the ship to be moored at the time materials and provisions are provided. This kind of service requires EMAP [Itaqui Port Authority] procedures to be followed and when the ship is operational, TRANSPETRO procedures must be observed as indicated at PMO TA & TM 2011. Also, TRANSPETRO and EMAP's Operational Control Center must be consulted for safety guidance. The companies hired to do this service must be registered with EMAP and be duly authorized to operate in the port's primary area.

4.3.7.2 Mooring services

EMAP [Itaqui Port Authority] has its own team to help with the cables during mooring and unmooring procedures.

4.3.8 Navigational Risks

Environmental conditions and seabed characteristics, as well as the dimensions of the access channel and maneuvering area, do not offer restrictions to navigation. However, great tide variations require special attention due to the speeds of the currents. The major risks for vessels operating at the Terminal are:

Os principais riscos para as embarcações que irão operar no terminal são os seguintes:

CHART 440

Long and close rocky ledges, bearing 038° to 066°, at a distance of 24.7 to 52 miles from Pirajuba lighthouse, sounding at least 10 meters.

Long and close rocky ledges, bearing 016° to 046°, at a maximum distance of 43.1 miles from Araçagi lighthouse, bearing 039°, sounding at least 8.9 meters.

Rocky ledge, bearing 015° to 020°, at 20.7 and 23.2 miles from Araçagi lighthouse, sounding at least 8.1 meters.

Long rocky ledge, bearing 027° to 031°, at 24.5 and 26.9 miles from Araçagi lighthouse, sounding at least 7.6 meters.

Rocky ledge, bearing 317° and lying 6 miles from Santana lighthouse, sounding 5.9 meters.

Long rocky ledge, bearing 006.5° to 060°, at 11.5 and 16.8 miles from Santana lighthouse, sounding at least 11.8 meters.

Rocky ledge, bearing 068° and lying 13.4 miles from Santana lighthouse, sounding 9.9 meters.

Rocky ledge, bearing 075° and lying 12.4 miles from Santana lighthouse, sounding 8.8 meters.

CHART 411

Coroa dos Ovos – Long rocky ledge, with SE limit bearing 352° and lying 5.6 miles from Pirajuba lighthouse, with extensive area that submerges and emerges in low tide.

Pedras de Itacolomi – Rocky ledge with ENE limit bearing 342° and lying 3.7 miles from Pirajuba lighthouse, which submerges and emerges in low tide.

Banco de Itacolomi – With N border bearing 028° and lying 5.4 miles from Pirajuba lighthouse, sounding at least 2.9 meters.

Banco das Almas – Long rocky ledge with fine sand, along the NE direction, with NE and SW limits bearing 065° and 127°, and lying 11.1 and 7.3 miles from Pirajuba lighthouse, sounding at least 3.9 meters.

Casco Soçobrado – Sunken wreck bearing 320º at 8.8 miles from Araçagi lighthouse, dangerous for navigation.

Banco do Meio – Long rocky ledge with sand, along the NE and SW directions, bearing 010° and 311°, and lying 13.9 and 8.8 miles from Araçagi lighthouse, sounding at least 2.1 meters, and breaking in low tide.

Banco Darlan – Long rocky ledge with fine sand, bearing 358° to 342°, lying 9.2 and 7.9 miles from Araçagi lighthouse, and sounding at least 3.7 meters.

Bancos Coral do Norte and Coral do Meio – Long rocky ledges with fine sand, with SW limit bearing 352° and lying 5.4 miles from Araçagi lighthouse, sounding at least 0.2 meter, and breaking in low tide.

Banco Coral do Sul – With SW limit bearing 330° and lying 3.9 miles from Aracagi lighthouse, with bollards exposed and breaking in low tide.

CHART 412

Banco da Cerca – Long rocky ledge, with SW and NE limits bearing 007° and 038°, and lying 1.7 to 5.2 miles from Medo Island lighthouse, sounding at least 0.2 meter, breaking in low tide.

Banco de São Marcos (bollards) – Bearing 030° to 054° and lying 0.9 to 1.8 mile from São Marcos lighthouse; discovers and breaks in low tide.

Long rocky ledge, bearing 050° to 055°, at 3.4 to 3.8 miles from São Marcos lighthouse, sounding at least 3 meters.

Rocky ledge, bearing 060° and lying 3.7 miles from São Marcos lighthouse, sounding 4.5 meters.

Submerged rocky ledges, bearing 072° and lying 3.7 miles from São Marcos lighthouse, sounding 4.5 meters.

Submerged rocky ledge, bearing 152° and lying 2.7 miles from Alcântara lighthouse, sounding 5 meters.

CHART 413

Rocky ledge, bearing 018° and lying 1 mile from Medo Island lighthouse, sounding 8.6 meters.

Pedra do Severino – Rocky ledge, bearing 033° and lying 1 mile from Medo Island lighthouse, sounding 2.4 meters.

Long rocky ledge, bearing 054° to 062°, at 1.1 to 1.6 mile from Medo Island lighthouse, sounding at least 1.4 meter.

Medo Island Reefs – Involving the island and extending towards NE up to 0.58 mile from the lighthouse, emerging and submerging.

Sunken wreck ("Hyunday New World"), bearing 262° and lying 3.3 miles from Medo Island lighthouse, sounding 2.5 to 8 meters.

Cabeço Mearim – Long rocky ledge, bearing 213° to 218°, at 1 to 1.3 mile from Medo Island lighthouse, sounding at least 4.4 meters. Identified by light buoy for isolated danger.

Rocky ledge, involving Guarapirá Island, sounding 3.4 to 10 meters. Its NNW, NE and SE ends are signaled with starboard light buoys.

Rock bearing 172° and lying 0.43 mile from Guarapirá Island lighthouse, sounding 12 meters.

Banco dos Lanzudos – Long rocky ledge with sand, which suffers periodic changes. Its N section is formed by two ends, sounding 10 meters, from which the depths gradually decrease until the area that emerges with half falling tide. The north end of the far east point bears 257° and lies 0.55 mile from Guarapirá Island lighthouse, signaled by a cardinal North light buoy.

4.3.9 General Restrictions

There are no restrictions regarding the maneuvering of ships at night, except in specific conditions, such as: the absence of lighted buoys, natural or unnatural cyclical events, or other decisions made between Piloting and the Companies involved, which may impose time restrictions.

The maximum speed recommended for the ships in the Piloting area must be of 8 (eight) knots maximum.

Ship captains and pilots decide on current and wind conditions for each case, with no maximum or minimum value established as a general or specific rule.

Maneuvering restrictions. Specific maneuvering cases for the São Marcos Bay Port Complex.

The Port of Itaqui uses the tide chart from Vale, authorized by Brazilian Navy Hydrography Center, as a reference for high and low tides times, to define maneuvering windows for the São Marcos Bay Port Complex, in accordance with ordinances issued by the Port Authority of the State of Maranhão - CPMA (see item 4.3.6.)

The updated Tide Chart and other information can be found at EMAP's website at: http://www.portodoitaqui.ma.gov.br/.

4.4 MANEUVERING AREAS

The turning basin is located between the Ponta da Madeira Terminal (chart 413), to the east, parallel 02°34'5 S to the south and buoys no. 23 and 25 to the west; the depth varies from 23 m at the mooring line by the pier up to 35 m, near buoy 25;

The basin's width is of 0.8 nautical miles; and its length is of about 2 miles.

The anchorage of any vessel is not allowed in this area, except with express authorization from the Port Authority.

4.4.1 Navigation and Mooring Aids

The Terminal does not have navigational aid equipment. However, tugs are used during the ships mooring/unmooring maneuvers according to the size of the vessel and piloting rules approved by the Port Authority. The terminal operator with the berthing team and the Transpetro's Safety Inspector assist the captain of the ship and the pilot to position the vessel to allow safe access and berthing as well as the hose connection for the operations.

4.4.2 Depth Control

The points limiting the maximum draft for mooring and unmooring at the Organized Port of Itaqui are at the access channel and are described in the nautical charts as per sections 4.3.8 and 4.3.9.

EMAP and Port Authority carries out periodical bathymetric recordings of the depths and drafts of the access channel, turning basin and mooring berths at the Organized Port of Itaqui.

4.4.3 Maximum dimensions

The minimum natural depth of the access channel is 23m, approximate width is 500 m and length 101 Km. The maximum draft allowed is of 22.3 m.

The internal channel offers the minimum depth of 15 m, approximate width of 280 m and the maximum size draft authorized is of 14.5 m.

The maximum DWT, Length, Breadth and Draft allowed for each berth are listed in section 6.2.

4.5 ENVIRONMENTAL FACTORS

Climate conditions
Maranhão is under the influence of several tropical climatic patterns, but with different amounts of rainfall and varied vegetation coverings. With a warm and semi-humid tropical climate, the state's average temperature is around 26.7°C, varying between 23.4°C (in winter) and 31°C (in summer) in the capital city, São Luis, and on the coast, with good weather conditions in the Port of Itaqui and adjacent areas.

AIR TEMPERATURE PORT OF ITAQUI			
MONTH	AVG. MAX.	AVG. MIN.	MONTHLY AVERAGE
January	30.6	23.7	26.8
February	30.2	23.3	26.4
March	30.2	23.3	26.3
April	30.4	23.3	26.3
May	30.9	23.2	26.3
June	31.2	23.0	26.4
July	30.9	22.7	26.2
August	31.4	22.9	26.6
September	31.5	23.7	27.0
October	31.5	24.0	27.2
November	31.4	24.0	27.3
December	31.3	24.1	27.2

SOURCE DHN

Air Pressure – The annual average is around 1,012mb
Relative air **humidity** during the year is around 82%

Silting Rate
With a silting rate found to be insignificant, dredging and maintenance of the Port of Itaqui are necessary only throughout the berths and only every 5 (five) years.

Further meteorological information for the area is described in the sub-items below:

4.5.1 Prevailing Winds

East winds prevail in the maritime region, with an average annual frequency of 54.25% and force 3-4 Beaufort; Northeast winds happen with a 19.41% average annual frequency and force 3-4 Beaufort.

4.5.2 Waves and Swells

Due to its location, the Port of Itaqui is protected from offshore waves. Perceived waves, reaching 1.10 m and 6.0-second periods, are formed in the São Marcos bay, caused by local winds.

4.5.3 Rainfall

Heaviest rainfall is observed from January to May – regionally considered the wintering period, where intense short-term rains occur. The maximum rainfall is observed in April at 472.6 mm/month. In the dry season, from August to November, rainfall levels drop to a minimum of 10.5 mm/month in November. December is considered a transition month.

4.5.4 Lightning Storms

They are not frequent and can occur in the summer, in the afternoon and early evening. Rare cold fronts and possible high temperatures during the day are major generating factors.

4.5.5 Visibility

Visibility is commonly high, but it can be limited during the rainy season. The months of February, March and April are those with the highest percentage of overcast skies, which coincides with the period of most intense rainfall in the region – varying around 77%. The table below shows cloud cover averages at the Port of Itaqui (Source DHN):

CLOUD COVER AVERAGE PORT OF ITAQUI	
MONTHS	TOTAL AVG. (0-10)
January	5
February	6
March	6
April	6
May	5
June	4
July	3
August	3
September	3
October	4
November	4
December	5

4.5.6 Tidal and Other Currents

Water circulation in São Marcos Bay is determined by tidal variations.

Current minimum values occur close to slack tide, while maximum values occur 3 to 4 hours after high waters at ebb tides and 2 to 3 hours after low waters at flood tides. Currents are reverse: follow the North to Northeast direction at ebb tide and, after the slack tide, the South to Southwest direction during the flood tides.

At Turning Basin, Flood currents vary from 4.3 knots at syzygy to 3.7 knots at quadrature; Ebb currents vary from 5.1 knots at syzygy to 4.2 knots at quadrature. Nautical chart 413 provides more information on the currents at the Port of Itaqui.

4.5.7 Tide level variation

The maximum mooring draft (18 meters) in berth 106 was calculated according to the worst tidal condition.

Tide cycle at the Port of Itaqui is semidiurnal, with the following data collected near the port and at the Ponta da Madeira Terminal:

Highest astronomical tide (HAT)	7.00 m
Lowest astronomical tide (LAT)	-0.20 m
Mean High Water Springs (MHWS)	6.27 m
Mean High Water Neaps (MHWN)	5.02 m
Mean Low Water Springs (MLWS)	0.59 m
Mean Low Water Neaps (MLWN)	1.84

Source: Vale

Tides vary in phase and amplitude along the access channel. In the initial section of the channel, buoys No. 1 and 2, tides occur 75 minutes before and with an amplitude of about 60% of those verified in the Port of Itaqui. Slack tide is about 69% of the amplitude for the same tide.

Maximum tides reach 7.1 m, occurring in the months of March and September, with average tidal variation of 3.4 m.

4.5.8 Measurements

Electronic data for determining and viewing currents and wind speed are not available for vessels approaching to moor.

5.

DOCUMENTS AND SHIP X TERMINAL INFORMATION EXCHANGE

The items listed below must be provided by either the Terminal or the Ship, as shown in the table.

Information	Prepared by:			Delivered to:			Notes
	Terminal	Ship	Both	Terminal	Ship	Both	
Prior to arrival							
Pre-operational information	x				x		Agent delivers it to the ship
Estimated Time of Arrival (ETA), ship and operations information		x		x			ship agent receives it and delivers it to the port
Prior to cargo transferring or fueling							
Terminal essential information	X				X		SISCOPE initial chart
Details of the cargo/ "slop"/ballast on board		X		X			During initial release
Essential information for the operation (complete on site)	X				X		During initial release
Ship/Terminal Operational Safety Checklist			X			X	As per ISGOTT Item 26.3.
During loading, unloading or bunkering operations							
Repeat Ship/Terminal Operational Safety Checklist			X			X	As per ISGOTT Item 26.3.
During loading, unloading or bunkering operations and prior to departure							
Required information for unmooring			X			X	Quantity of fuel and water on board
After unmooring, when departing the port							
Information regarding Port departure data		X			X		Pilot disembarking and ship departure time

6.

PORT/TERMINAL DESCRIPTION

6.1 GENERAL DESCRIPTION

Itaqui comprises eight operational berths with depths ranging from 12-19 meters, of which the port has a mooring dock with six berths, designed to receive vessels of up to 100,000 DWT, as well as two liquid bulk piers designed for vessels of up to 155,000 DWT.

6.2 PHYSICAL DETAILS OF TRANSPETRO-OPERATED BERTHS

BERTH	TYPE	BERTH LENGTH (in meters)	DEPTHS (in meters)	BEAM (max.)	LOA (max.)	PRODUCTS HANDLED	MAX. DWT	MAX DRAFT (in meters)
102	Dock	223	12	40	200	LPG BUNKER	80,000	11.5
104	Dock	200	15	40	183	LPG, LIGHT, DARK and BUNKER	100,000	14.5
105	Dock	280	18	45	229	BUNKER	150,000	17.5
106	Pier	340	19	50	280	LIGHT, DARK and BUNKER	155,000	18.5
108	Pier	300	15	40	245	LIGHT	91,600	14.5

Source: EMAP

6.3 RECOMMENDED MOORING AND BERTHING ARRANGEMENTS

Berths 102, 104 and 105

Vessels		Mooring (Fwd / Aft)
LOA	DWT	
≤ 150 m	≤ 20,000 ton	3 - 1 - 1
> 150 m and ≤ 190 m	> 20,000 ton and ≤ 40,000 ton	3 - 2 - 2
> 190 m	> 40,000 ton	4 - 2 - 2

Berths 106 and 108

Vessels		Mooring (Fwd / Aft)
LOA	DWT	
≤ 190 m	≤ 20,000 ton	3 - 2 - 2
≥ 190 m	≥ 40,000 ton	4 - 3 - 2

Source: EMAP

6.4 BERTH LOADING, UNLOADING AND BUNKERING FEATURES

BERTH	PRODUCTS	LINES	HOSE FLANGES	RECEIVES & SHIPS	TEMP. °C		FLOW (MAX.) M³/h	PRESSURE (MAX.) 17kgf/cm²
					MIN.	MAX.		
102	LPG	1 x 8"	2 X 8" API	RECEIVES	+5	45	300	17
	MGO	1 X 6"	1 X 4" API	SHIPS	15	40	100	7
	MF	1 X 10"	1 X 4" API		40	60	200	
104	LIGHT	1 X 12" E 1 X 18"	8 X 8" API	RECEIVES & SHIPS	15	40	1200	7
	MGO		1 X 4" OU 1 X 8"				100	7
	DARK	1 X 14"	3 X 8" API		60	70	800	7
	MF		1 X 4" ou 1 X 8"		35	60	200	7
	GLP	1 X 8"	1 X 8"	RECEIVES	+5	45	300	17
105	MF	1 X 10"	2 X 6"	SHIPS	30	60	300	7
	MGO	1 X 4"	2 X 4"	SHIPS	30	45	200	7
106	LIGHT	1 X 14"	7 X 8" API	RECEIVES & SHIPS	15	40	800	7
	MGO	1 X 18"	1 X 4" ou 1 X 8"	SHIPS			100	7
	DARK	1 X 10"	1 X 8" API	RECEIVES & SHIPS	60	70	1200	7
	MF		1 X 8"	SHIPS	35	60	200	7
108	LIGHT	3 X 8" 2 X 14"	5 X 8"	RECEIVES & SHIPS	15	40	1200	7

6.5 MANAGEMENT AND CONTROL

The Terminal Control Room (Cargo Control Center) is located in the Administrative area, close to the tank area, about 1.5 km from the Port. A shift supervisor and a room operator control the operations at the several berths through both a radar-based measurement system and a mass balance system, as well as product pumping operations to other neighboring terminals, according to the operational planning set forth by Transpetro's Logistics in Recife and Rio de Janeiro. Adjacent to it, in the Planning and Logistics Operation Room, the CTO (technical operational coordinator), the terminal operator and the management and control technicians carry out a comprehensive documentation of the terminal operations.

Communication with vessels, other Terminals and operators involved are carried out via Marine VHF radio (channel 06), as previously agreed and registered. In case the main system fails, a secondary communication point, by phone (+98 3217 6508/6507), is available, also used in emergencies.

6.6 MAJOR RISKS TO MOORED SHIPS

Ships moored at the berths are vulnerable to a maximum tidal variation of around seven meters. Low water currents may cause the ship to move away from the pier fenders at the stern or bow, regardless of which side is moored.

At berths 102 and 104, greater attention must be paid by the vessel crew to the mooring lines, as generally the same bollard is used by two different vessels moored in sequential berths, which may require that the bollard line be relieved to facilitate the other vessel's maneuver. There may also be involuntary displacements as other ships at short distances and above-the limit speeds cross the channel or due to collision.

7. PROCEDURES

During a ship's laytime at the Port, several actions are taken to enable safe operations and minimize manageable risks. In all phases, as described in the sub-items below, measures are taken to plan and facilitate operations, accordingly.

7.1 PRIOR TO ARRIVAL

7.1.2 Operation refusal

Based on information from the Routing Registration System (SIRE) and SIS3, Transpetro and Petrobras Vetting departments in Rio de Janeiro assess the history of the vessel against a group of aspects and request updated information from the vessel operator. If there are any pending issues that may compromise the operation, the vessel will not be accepted into the Port of Itaqui. The above-mentioned departments draft and submit, on a weekly basis, the List of Accepted Vessels that are allowed to operate within a certain period. Near the end of such, if the ship has not yet operated, the agent will request and justify the need for additional assessment, and once again submit the results to the appreciation of Transpetro and Petrobras Vetting departments. After mooring and before the operation starts, the vessel must be inspected by the Safety Inspector, as per ISGOTT and following the Operational Safety Checklist. In case any missing item is detected, the vessel will not be cleared to operate.

7.1.2 ETA

Ships heading to the Port do Itaqui must inform the estimated time of arrival (ETA) 72 hours and 48 hours in advance, directly to the agent in charge, by email. Any change or the confirmation of the vessel's previous estimate must be communicated at least 24 hours in advance. ETA must specify whether mentioning local time or GMT.

7.1.3 Pre-operational information

the Agency is instructed to share the Pre-operational Information with the vessel crew 48 hours prior to arrival at the port, the purpose of which is the early exchange of essential data to expedite and streamline operations. If the vessel is scheduled to be refueled, the Bunker Preliminary Information Exchange is also issued, for the same purpose.

7.2 AT ARRIVAL

7.2.1 Visit by Port Authorities

The vessel must inform the HOC and issue the NOR, which is submitted to the Agent, who, in turn, forwards the document to the Port Authorities, the Maritime Authority and the Terminal, enabling a review of mooring estimates. As a rule, visits are made only after the vessel has docked.

7.2.2 Bunkering

Fuel supply requests must be submitted to Petrobras Bunker in Rio de Janeiro through its agent or Shipowner/Operator.

7.2.3 Ship/Terminal Information Exchange

Ship and Terminal exchange information before the ship's arrival and during initial release procedures upon mooring, as well as relevant safety information, such as escape routes, emergency flowcharts, emergency contacts, a list of the Port telephone contacts as per item 9.1, and crew evacuation routes in case of any emergency.

7.3 MOORING

7.3.1 Ship mooring system

The mooring to be actually carried out for each vessel must be designated as suitable and safe by the Captain and the Pilot, considering the operational requirements of both the vessel and the Terminal, as well as provide safe access in all situations, including emergencies, as per ISGOTT.

Mooring lines must be permanently cared for in order to keep the vessel at berth at all times, they must be kept under adequate tension during the operation, with the winch brakes activated. Automatic tension winches are not allowed.

Lines must be of the same type, gauge and material (fiber or wire), and, whenever possible, of the same length. Mixing lines is not allowed.

Lines must also be long enough to reach the most distant dolphins or bollards and be arranged as symmetrically as possible in relation to the middle of the vessel.

Breast lines must be directed as perpendicularly as possible to the vessel's longitudinal axis and passed as far forward and aft as possible.

Spring lines must be directed as parallel as possible to the longitudinal axis of the vessel.

The maximum stress applied to the lines must be 55% of their MBL. If fiber harnesses are used in the wire ropes, they must be of the same type, with gauge 25% greater than the minimum breaking load of the wire rope, same material and length.

The horizontal angle of bow and stern lines against a breast line perpendicular to the ship's longitudinal axis must not exceed 45°.

Approach, mooring and unmooring maneuvers must be performed at low speed, preferably against the current.

Care should be taken when passing the ship's stern mooring lines to the mooring boats, in order to avoid accidents with the ship's and mooring vessels' propellers.

Automatic tension winches are not permitted. The recommended mooring procedures consider that the lines and winches of the ships are in good condition.

Extra care should be taken with the breast and spring lines within 1.5-4.5 hours before high tide and low tide. Especially, 1.5 hours after high tide, when the largest ebb currents start.

If the ship does not have enough lines, preferably steel lines, or its lines and winches are in poor condition, or if the crew is unable to maintain the ship moored according to the recommendations, additional measures will be taken by the Terminal Operational Safety Inspectors, such as:

a) The operation will not start;

b) The operation will be interrupted, if it has already started;

c) Tugs will be kept on stand-by or along the ship; and/or as a last resort;

d) The ship will be required to unmoor.

Costs and time resulting from these additional safety measures must be solely born the Captain/Shipowner.

While moored, ship engines must always be kept in "stand-by", ready to go into operation in case of any emergency.

EMAP relies on trained personnel, available to handle the ships' mooring lines during mooring and unmooring maneuvers. Lines must be handled onboard during such maneuvers by the ship's crew.

7.3.2 Ship/Shore Access

The Port does not provide access ladders. Ships must use their own embarkation ladders or boards, as per EMAP Welcome Charter.

7.4 PRIOR TO CARGO TRANSFERS

7.4.1 Safety Checks

Right after mooring and before the operation starts, in order to check the operational safety conditions, equipment and procedures, GIAONT performs the Safety Inspection, according to the Operational Safety Checklist, based on ISGOTT latest edition and according to the type of ship.

This should reflect the ship's exact condition at the moment the Giaont Inspector submits the results to the ship's Captain or legal representative. Should any non-compliant item be identified that may affect the safety of the operation, it will only start after the issue is resolved and the ship is considered safe to operate. The Inspector must immediately report such pending issue to the Nautical Advisor and Shift Supervisor, and even if resolved, it must be registered in Annex IV, taken into account for vessel assessment as provided for in Annex V of the PMO, and registered in the SIGO system.

7.4.2 Connecting Hoses – Notes

The Terminal uses an insulating joint and/or at least one discontinuous hose in the shore-to-ship connections. The hoses undergo registration and control for hydrostatic, vacuum and electrical discontinuity testing, and are verified at intervals no longer than 1 year. Test certificates are available for consultation or copy.

The necessary resources for connection are agreed upon the first contact of the ship with the terminal, during the initial release procedures.

The ship must arrange the diameter of the cargo sockets in order to allow the connection of the hoses. (Inform previously).

After connecting the hoses, they are tested for leak--tightness; the static pressure of the terminal column is used for this purpose.

An onboard representative must follow the entire operation and stay close to the ship's cargo socket.

7.4.3 On-board Measurements

On-board measurements will be carried out by the ship's crew and fallowed by terminal representatives and cargo inspectors. The material used must be properly grounded and the measurement accessories must be explosion-proof.

7.4.4 Operation authorization

The operation only begins after the initial chart has been filled out by the shore and ship representatives. The Load Plan and the order of the operation must be submitted to the Terminal Operator and discussed before it starts.

7.4.5 Restricting the excess of smoke and soot

Regrinding and boiler piping cleaning are forbidden on moored ships. Great care must be taken so that sparks do not escape from the chimney. Failure to comply with these regulations will result in one or more of the following sanctions:

- Immediate interruption of operations;
- Communication of the infraction to the shipowners;
- The ship will be held accountable for fines, time loss and all other related expenses resulting from the fact.

7.4.6 Ship side restriction/condition

The prohibition on the stay of unauthorized small vessels on the side or near the moored vessels must be strictly observed. Only vessels authorized by the terminal may remain in the vicinity or alongside the ship, provided they meet all safety conditions. Any violation to this norm must be reported to the competent authority.

7.4.7 Restriction of propeller movements

Moored ships will not be able to move their propeller(s) as long as they remain connected to the hoses. Ratchets may be used, after due notice to the terminal operator. However, the propeller must be moved slowly so that absolute safety is obtained. Ships will be held accountable for any damages resulting from these procedures.

7.5 CARGO TRANSFER

7.5.1 Monitoring pressure and flow

During cargo transfer, those are registered by the ship and shore representatives on the ship's manifold on an hourly basis. The terminal controls the internal pressure variables through the centralized control system. Flow rates on both sides of the operation are verified hourly and compared between the parties having, according to the system used, a limit parameter for operational control. Any change in operating conditions must be communicated and documented between the parties. It is strictly forbidden to close valves that cause backpressure in the system - if necessary for operation, the ship must inform the Terminal in advance, in order to avoid pressure surges. The Terminal in turn must also inform the ship in advance, requesting flow reduction and reporting the need to carry out maneuvers on land.

7.5.2 Transshipment operations

Transshipment operations may be carried out with the vessels moored in different berths or alongside the vessel, using the interconnection alignments of the terminal berths or hoses directly between the ships.

7.5.3 LPG special requirements

The terminal will check its LPG system, providing for an adequate and aligned relief system.

The ship must not exceed the pressure of 17 Kgf/cm² when in operation. If so, the Terminal will request the ship to immediately reduce the pressure or stop the pumping.

Communication must be checked, as well as the full alignment before the operation starts.

The hoses connected to the ship are monitored full time during the operation; product temperature should always be kept above +5°C.

The emergency stop will be negotiated with the ship upon initial release. The volume handled at both ends of the duct is monitored throughout the operation. There is an Inspection and Maintenance Plan for Tanks, Lines and Accessories and maintenance is immediately called to action in case any defects are identified to perform proper repair.

7.5.4 Ballasting and de-ballasting requirements

The ships' ballast and de-ballast nets and tanks should only be used for this purpose, when isolated from other on-board networks. The ballast of water to be discharged to sea must be completely free of oil, any oily residue or other substance that might pollute seawaters.

7.5.5 SLOP description and receipt conditions

The terminal does not have ship slop receiving facilities.

7.5.6 Tank cleaning (COW operation)

The conventional tank cleaning operation is not normally accepted. However, the COW operation is accepted, depending on prior schedule authorization for vessel laytime purposes at the Port and on GIAONT for operational security purposes.

7.5.7 Restrictions/conditions for repairs

Repairs or maintenance work of any kind that involve or may involve the risk of sparks or other ignition means may not be carried out while the ship is docked at the Terminal piers. In extreme cases, all safety rules must be observed and met. Repairs involving the pier facilities or implying any restriction on the ship during laytime must be previously analyzed and authorized by the Terminal, the Port Authority and the Maritime Authority.

7.5.8 Intermediate Inspections

According to Appendix A of the "ISGOTT", they are performed by GIAONT during the operation of the ship at intervals agreed upon the initial release, which may not exceed 6 hours, according to the operational safety criteria and registered in the Operational Safety Checklist.

7.5.9 Operation Interruptions

Interruptions of loading or unloading operations may occur in any situation, whether on the Ship or at the Terminal:

- Temporarily during storms, with incidence of lightning and/or strong winds (According to parameters listed in the ISGOTT Operational Safety Checklist);
- In case of non-compliance with any of the rules and norms concerning security, universally accepted and adopted in the maritime transport of oil;
- If the ship's Captain has reasons to believe that onshore operations do not offer safety, provided pier operators are notified in advance;
- Product leakage on the ship or at the Terminal;
- Marked cargo difference between the unloaded and received onshore or received on the ship;
- Non-compliance with any Operational Safety Recheck item

7.5.10 Emergency Measures

For any emergency event, the Terminal may interrupt ongoing operations so that all resources are employed to mitigating possible damages.

The actions and contact points for each type of emergency are described in the Terminal's PEI and in the Communication flow as explained in the Flowchart delivered to the CPT upon initial release of the ships.

EMERGENCY COMMUNICATIONS

EMERGENCY COMMUNICATION FORMS

AT EMERGENCY ONSET: STOP X STOP X STOP

...SUBSEQUENTLY, DESCRIBE THE EMERGENCY.

AT EMERGENCY TERMINATION: ALL CLEAR

AREA EVACUATION AND SHIP ABANDOMENT

AREA EVACUATION

The Shift Supervisor or Terminal Manager, when ordering the evacuation of an Emergency site at the port, must ensure that all operations support personnel, service providers, maintenance personnel listed in the PTs (Work permits) authorized to be on the dock, Operation Technicians and Nautical Inspectors leaves the port area, making sure that no one was remains on the site, contacting those responsible for the employees, using the VHF both on working channel and 06.

Lead all employees to the Support Centers located at the confluence area of berths 103/104 and 105/106, using the escape routes marked on the platforms and tracks. According to the Port of Itaqui Emergency Control Plan (PCE).

ABANDON THE SHIP

The vessel's CPT, when ordering abandonment, must ensure that all crew members on board leave the ship, ensuring that none remains on-board.

Lead crew members to the Support Center located at the confluence area of berths 103/104 and 105/106, using the escape routes marked on the berth tracks and platforms, in an orderly manner, together and wearing proper PPE, also following the guidelines of the Port emergency counsellors.

7.6 CARGO MEASUREMENT AND DOCUMENTATION

7.6.1 Hose drainage

Upon operation completion, used hoses must be drained. Terminal operators will provide drainage for the closed system on the pier. The ship's representative should provide drainage for the on-board section.

7.6.2 Final on-board measurement

Final on-board measurements will be carried out by the ship's crew and fallowed by terminal representatives and other inspectors. The material used must be properly grounded and the measurement accessories must be explosion-proof. The final ship release must be preceded by a review of the amounts handled and full provision of laytime documentation.

7.7 UNMOORING AND PORT DEPARTURE

7.7.1 Special precautions for port Ddparture

During the unmooring maneuvers for port departure, channel limits and hazards reported in section 4.3 and its sub-items must be observed.

7.7.2 Pilot disembarking area

The will pilot normally disembark at the same boarding point described in section 4.3.6 where a pilotage boat will be waiting.

8.

PORT OR ANCHORAGE AREA ORGANIZATION

8.1 PORT CONTROL OR VTS

As per section 4.3.5

8.2 MARITIME AUTHORITY

The maritime authority to which the terminal is subordinated is the Captaincy of the Ports of the State of Maranhão. It is her responsibility to determine the actions and to prosecute those responsible for any incident within the limits of the port.

The Captaincy of the Ports of Maranhão determines that the visit of the authorities is carried out after the ship is docked in the port.

The Port Authority of Maranhão also defines the official limits of the port according to section 4.3.4.

The Port Authority is the Maritime Authority on the outskirts of the Port of Itaqui,

8.3 PILOTAGE

Pilotage is mandatory for all ship maneuvers from the pilot's embarkation point (section 5.3.6).

Regardless of nationality, type of vessel and destination, the pilotage service is mandatory for vessels above 2,000 DWT.

Pilotage organization operating at the Port of Itaqui, comprised by 36 Pilots:

ASSOCIAÇÃO DOS PRATICOS DO ESTADO DO MARANHÃO [Pilots Association in the State of Maranhão] (APEM)
Rua Montes Altos, 08 – Quintas do Calhau – Calhau – São Luis – Ma.
+55 (98) 3223 8586 During non-business hours
+55 (98) 981110356 (24h service)
VHF: Channels 16 and 14
Email: plantao@apem-ma.com.br

In cases of any EMERGENCY, reach APEM directly from the ship or through the agency. Contact details are listed above.

8.4 TUGS AND OTHER MARITIME SERVICES

8.4.1 List of companies operating tugboats:

Camorim Serviços Marítimos Ltda (STARNAVE)
Contact point: Mauro Silva +55 (98) 99972 7604/ 98407 9247 maurosilva@camorim.com.br | http://www.camorim.com.br

SAAMSMIT Towage Brasil S/A
Contact point: Aloisio Junior aloizio.junior@saamsmit.com.br- +55 98 98802 7522 / +55 98 3311 5000 / +55 98 3311 5005 www.saamtowage.com

Consórcio de Rebocadores da Baia de São Marcos - CRBSM
Contact point: Gabriel de Vico - +55 98 99601 7688 gabriel.devico@crbsm.com.br

Requests to tugboat operating companies must be made by shipping agencies, in accordance with the document "Normas para Manobras do Complexo Portuário da Baia de São Marcos" [Rules for Ship Maneuvering in the São Marcos Bay Port Complex].

8.4.2 Tugboats available

Currently, the São Marcos Bay Port Complex has access to a total of 21 available.

Note: Tugs may occasionally be unavailable due to emergency repairs, scheduled docking or any other operational need.

Operating companies must inform the Agencies, the Terminal, EMAP and Pilots when the tugs will be out of service (date and time) and the deadline for their return to activities.

8.4.3 Other relevant maritime services at the Port:

COMPANY	TELEPHONES	CONTACT POINT	IMMEDIATE MOBILIZATION CAPACITY
FIRE DEPARTMENT GROUP OF MARITIME FIREFIGHTERS - GBMAR	+55 (98) 3212 1530/ 1531/ 1532 or dial 193	Captain Reis	3 firefighters (24h-service). In case of greater contingency (15 divers)

8.4.4. Repairs on moored ships:

Maintenance repairs may be performed provided that the following conditions are met (and safety of operations are not affected):

- Authorization by the Port Authority;
- Authorization by EMAP;
- Compliance with the premises of Transpetro's PMO;
- Preparation of a Preliminary Risk Analysis, by the Terminal (Nautical Inspector) and the Ship's Cpt, to approve and monitor such maintenance procedures.

8.4.5. Support boats:

Support boats for the supply of spare parts, food and waste removal are called to action via the ship's agent and cannot dock alongside the moored ship while in operation without first obtaining authorization from EMAP and the Terminal Security Inspector.

8.5 OTHER TERMINALS

The port complex comprises two other ports. The Ponta da Madeira Port belongs to VALE and handles Solid bulk (iron ore), copper and soy; the ALUMAR Port belongs to the BILLITON/ALCOA group and handles aluminum and bauxite, occasionally, handles fuel oil and may handle oil by-products during ship bunkering operations.

8.6 OTHER MAIN USERS – PORT OPERATORS

Other users also operate ships in the Port of Itaqui and share berths in line with the interests of the Port Authority (EMAP), as listed below:

- **Tequimar / Ultracargo -** Liquid bulk;
- **ALZ Terminais Portuários** - solid bulk;
- **Brasil Marítima** - Solid bulk, general cargo and containers;
- **COPI** - Solid bulk, general cargo and containers;
- **Corredor Logística e Infraestrutura S.A** - Solid bulk, general cargo and containers;
- **DATA Operações Portuárias LTDA** - Solid bulk, general cargo and containers;
- **G5 Soluções Logísticas** - Solid bulk, general cargo and containers;
- **Glencore** – Solid bulk;
- **Granel Química** – Liquid bulk;

- **Itaqui Geração de Energia** – Solid bulk;
- **Pedreiras Transportes do Maranhão LTDA** - Solid bulk, general cargo and containers;
- **TEGRAM** - Solid bulk;
- **Termaco Operações Portuárias S.A** - Solid bulk, general cargo and containers;
- **Terminal Corredor Norte S.A** - Solid bulk;
- **Transglobal Operações Portuárias LTDA** - Solid bulk, general cargo and containers;
- **VLI Multimodal S.A** - General cargo and solid bulk;

8.7 COMPANIES AUTHORIZED TO PROVIDE SEVERAL SERVICES TO VESSELS

EMAP's website features a list of shipping service providers (visit the website and follow the path: Porto do Itaqui – Comunidade Portuária - Credenciados):

- Agencies
- Tenants
- Concession holders
- Órgão Gestor de Mão de Obra [Manpower Management Body] (OGMO)
- Operators,
- Accredited companies
- Pilots

9.

EMERCENCY RESPONSE PLANNING

9.1 EMERGENCY RESPONSE PLAN FOR THE SÃO LUIS TERMINAL (PRE) & INDIVIDUAL EMERGENCY PLAN (PEI)

It sets forth procedures to be adopted in case of fire, oil spills and first aid to victims, in accordance with the resolutions of the Environmental Agency, as well as Petrobras and Transpetro internal procedures.

9.2 INTEGRATION WITH OTHER PLANS

- Plano de Emergência Corporativo da Petrobrás [Petrobras Corporate Emergency Plan] (PCCORP)
- Plano de Auxílio Mútuo [Mutual Aid Plan] (PAM) for the Port of Itaqui

9.3 EMERGENCY CONTACTS (PAM)

TELEPHONE NUMBERS

- (98) 3231-7444 CCO EMAP (98) 98457-4841
- (98) 3216-6500 COSET EMAP (98) 98454-3310

The following table lists the primary contact points, including telephone and fax numbers, radio channels and frequencies.

Organization	Opening hours	Identification Acronym	Land line	Mobile	VHF Call	VHF Conversation
Port Authority	24h	CPMA	+55(98) 2101.0107	—	16	—
EMAP	24h	CCO – Centro de Controle	(98) 3216.6032	+55(98) 984574841	16	—
Transpetro – TA SLUIS	24h	GERÊNCIA	+55(98) 3217.6501	+55(98) 984784958	—	—
Transpetro – TA SLUIS	24h	Sala de Controle	+55(98) 3217.6507	Supervisor 991126584	16 & 06	06
Transpetro – TA SLUIS	7:30 am to 4:30 pm Mon-Fri	Programação Ta Sluis	+55(98) 3217.6502	+55(98) 991148158	—	—
Pilotage Association in the State of Maranhão	24h	APEM	+55(98) 3223.8586 3226.8587	+55(98) 981238745 981110356	16	14
Tugboats	24h	SAAMSMIT CONSORCIO STARNAVE	+55(98) 3301.7345	+55(98) 999727604	16	14
Gire Department	24h	CBMMA	+55(98) 3228.2154	193	—	—
Civil Defense	24h	—	+55(98) 3212.1517	193	—	—
Military Police (GTA)	24h	PMMA	+55(98) 3235.2159 3235.8113	+55(98) 9112.5510 193	—	—
Federal Revenue	8:00 am to 5:00 pm	—	+55(98) 3231.6001	—	—	—
São Luis City Government	:00 am to 5:00 pm	PMSL	(98)	—	—	—
Environment State Department (SEMA)	24h	—	+55(98) 3218.8745	—	—	—
Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA)	24h	—	+55(98) 3231.3207 3231.3070 3231.3010	+55(98) 9991.1296 9971.5509 9991.2543	—	—

9.4 ENVIRONMENTALLY SENSITIVE AREAS

Vulnerable areas, areas associated to several economic activities, namely port, fishing and shipbuilding activities, as well as places of historical and tourist relevance, which may be affected in case of hydrocarbons spills and other hazardous products to the marine environment.

Vulnerable areas include:

- Access channel to the Port of Itaqui;
- Oil Pier 106 and 108 (full area);
- Mooring docs of Berths 100, 101, 102, 103, 104 and 105;
- Porto Grande Fishing Port;
- Alumar Port

Sensitive Areas

Within the area of influence of the Port of Itaqui, sensitive areas are those of great biological activity or of special occurrence of sea birds, leisure beaches and marinas, as well as those where priority should be given to conservation and cleaning, in case of hydrocarbons spills and other hazardous products to the marine environment.

The following are considered as sensitive areas according to the region's sensitivity map:

- Mangrove area adjacent to Porto do Itaqui;
- Strait of Coqueiros and Cachorros River.

Environmental Sensitivity Map

The Local Contingency Plan (PCL) comprises the areas that are most sensitive to environmental impacts sorted in sheets, (Maps, Drawings and Attachments) that contain environmental sensitivity maps showing, according to the selected area, the points that are subject to the greatest impacts when this type of event occurs in São Marcos Bay.

9.5 GENERAL DESCRIPTION OF THE EMERGENCY RESPONSE ORGANIZATION

Organizations in charge of handling possible emergencies involving vessels arriving at the Terminal.

Incidents within Port/TA-NE/SLU Terminal area					
Type of incident	Organization in charge	Other concerned organizations			
Collision in the channel	Port Authority	Civil Defense	TRANSPETRO		
Vessel Stranding	Port Authority	Civil Defense	TRANSPETRO		
Collision at berth	Port Authority	TRANSPETRO	Civil Defense	EMAP	
Shipwreck	Port Authority	Civil Defense	Fire Department	TRANSPETRO	
Fire on the Vessel	Ship	TRANSPETRO	Fire Department	Civil Defense	Port Authority
Fire at Berth	TRANSPETRO	Fire Department	Civil Defense	Port Authority	EMAP
Pollution	TRANSPETRO or Ship	Port Authority	SEMA	IBAMA	EMAP

9.6 EMERGENCY PLANS

9.6.1 Individual Emergency Plan (PEI)

It is TA SLUIS' plan for emergency response in all its facilities. It is available in all operational areas, on boards located at the entrance to the operation/maintenance rooms and administrative buildings. Its update is a responsibility of the local Environment, Health and Safety department.

The Terminal has an Emergency Response Center (CRE), which is equipped with modern tools and facilities for a first response in case of accidental pollution. Intensive training is carried out periodically, enabling terminal employees to act according to the PCL. Located at a strategic site, it allows quick action in responding to emergency events. Containment barriers, oil collectors and other equipment and materials necessary for the works are stowed in its warehouse. Work vessels, support vessels, tankers and collecting vessels are permanently stowed on road trailers and ready for service, on the ramp to Berth 101.

9.6.2. Public Resources for Emergency Response

Considering the Port of Itaqui, only TRANSPETRO, through the São Luis Terminal and other operational units, called to action through the local contingency plan, owns resources that may be used to mitigate sea pollution events. For other emergencies, public organizations provide the resources they are intended for.

9.6.3 Local Emergency Services

The Fire Department, the Civil Defense, the police and the São Luis hospital unit manage the resources they are intended for and are called to action according to the table in section 9.1.

The organized port of Itaqui has an ambulance equipped for first aid services in its Primary Area (located near the pier). A Nursing Technician works on a shift basis. Severe cases will be referred to the general hospital in the city of São Luis, about 11 km from the premises, or to the hospital covered by the victim's healthcare insurance service.

9.7 MUTUAL AID PLAN (PAM)

The institutions listed below participate in the Mutual Aid Plan (PAM) for the Port of Itaqui and provide available resources as previously agreed.

- Fire Department (Military Police) of the State of Maranhão
- TRANSPETRO/TA-NE/SLU
- São Luis City Government (Civil Defense)
- EMAP – Empresa Maranhense de Administração Portuária [Port Authority in Itaqui]
- PETROBRÁS DISTRIBUIDORA S.A.
- TEXACO DO BRASIL
- SHELL S.A.
- ESSO S.A.
- MOINHO DE TRIGO DO MARANHÃO S.A.
- GRANEL QUÍMICA LTDA
- CONAB [National Food Supply Company]
- COMPANHIA DE PETRÓLEO IPIRANGA
- PETRÓLEO SABBÁ
- RAÍZEN

9.8 RESPONDING TO OIL SPILLS

The sub-items below describe the resources available for pollution response actions in the areas adjacent to the Terminal.

9.8.1 Terminal Response Capacity

Resources intended for oil spill response actions concerning the Terminal are listed in the PCL, whose copy is available in the administrative, operational and maintenance areas of the Terminal.

9.8.2 Environmental Agency Response Capacity

The Environmental Agency in Maranhão does not provide resources to respond to oil spills at sea.

9.8.3 Resources Available from Other Terminals' Mutual Aid Plans

Resources available at other TRANSPETRO terminals for responding to pollution emergencies occurring in the vicinity of the Terminal are listed in the local PCL.

9.8.4 Medium and Large-Scale Spill Response

Organization designated to respond to significant pollution events, in which regional resources from TRANSPETRO/PETROBRAS are requested. Such resources, their availability and form of access are described in the PCL.

9.9 RESPONSE TO OTHER LARGE-SCALE EMERGENCIES

TRANSPETRO has a Special Contingency Group (GEC), which, if called to action, will provide support for major emergencies. The Terminal's Individual Emergency Plan (PEI) lists the actions and those in charge for each type of planned event, which may occur within a unit, pipeline range or vessels and involves third parties.

For events that are not provided for therein, TRANSPETRO/PETROBRAS will fully supply the national or international resources within its reach.

10.
CONTACTS

The items below provide the Organizations' Contact details, including telephone and fax numbers, contact points, email addresses, radio channels/frequencies.

10.1 Terminal

Operations Management
Land line: +55(98) 3217.6501 –
Mobile: +55(98) 9 91535036

Operational Technical Coordinator –
+55(98) 3217-6502 – Mobile: +55(98) 9 9114.8158

Shift Supervisor – +55(98) 3217-6508 –
Mobile: +55(98) 9 9112.6584

Operations Room – +55(98) 3217-6507

Nautical Advisor/Bunker Manager /SSP(ISPS) –
+55(98) 3217-6540 Mobile: +55(98) 9 9137.3302

GIAONT
Operational Inspection and Monitoring Group
for Ships and Terminals – On-call inspector –
+55 (98) 9 9152.3959

EHS
- Safety – (98) 3217-6514
- Environment – (98) 3217-6516 e 3217-6530

10.2 Local authorities, State and Governmental Agencies

- **Brazilian Health Regulatory Agency (Anvisa)**

Telephone: +55(98) 3221-0855
Email: carlos.bouman@anvisa.gov.br

- **PORT AUTHORITY**

Telephone: +55(98) 2107-0101
Email: antonilda@cpma.mar.mil.br

- **FEDERAL POLICE**

Telephone: +55 (98) 3222-4407
Email: portodoitaqui.srma@dpf.gov.br

- **FEDERAL REVENUE**

Telephone: +55(98) 3216-6089
Email: aldenora.moura@receita.fazenda.gov.br

- **International Agricultural Surveillance (VIGIAGRO)**

Telephone: +55(98) 3216-6054
Email: vigiagro-ma@agricultura.gov.br

10.3 Shipping Agents

- **Sindicato das Agências Marítimas [Union of Maritime Agencies] – SYNGAMAR**

Telephone: +55(98) 3231-6885 / +55(98) 3222-4747
Email: syngamar@syngamar.com.br /
administrativo@syngamar.com.br

Note: For information on other Shipping Agencies, contact Syngamar.


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