



# **Oil Companies International Marine Forum**

## **MTIS Programme**

### **Terminal TPQ**

**Terminal TPQ: Canaport LNG**

ReportName 35ad9a1d-dcfb-4416-8902-69f7354e5ca9

**Terminal Name: Canaport LNG**

**Terminal Port: Saint John**

**Terminal Port Authority: Saint John Port Authority**

**Country: Canada**

28 October 2016

## 1 General

1.1	Date this TPQ document was completed/updated	28 October 2016
1.2	Specify units used	Metres and Metric Tonnes

## 2 Port Details

2.1	Port Name	Saint John
2.2	UN LOCODE	CASJB
2.3	Country	Canada
2.4	Latitude and Longitude of Port	
1	Latitude	451218 North
2	Longitude	0655850 West
2.5	Is this location affected by ice?	No
2.6	Name of port authority	Saint John Port Authority
2.7	Port authority contact name and title	Chris Hall, V.P. Operations, Infrastructure & Harbour Master
2.8	Port authority full style contact address	
1	Address Line 1	111 Water St.
2	Address Line 2	
3	Address Line 3	
4	City	Saint John
5	County/State	New Brunswick
6	Postcode/Zipcode	E2L 0B1
7	Phone	1(506)636-4869
8	Fax	+1 (506) 636-4443
9	Email	chall@sjport.com
10	Website	www.sjport.com

## 3 Terminal Details

3.1	Terminal name	Canaport LNG
3.2	Terminal owner	Repsol & Irving Oil
3.2	Number of berths included in this TPQ	1
3.3	Name of first point of contact for terminal owner	Martin Ugarte
3.4	Terminal owner full style contact address	
1	Address Line 1	2530 Red Head Road
2	Address Line 2	PO Box 2029
3	Address Line 3	
4	City	Saint John
5	County/State	New Brunswick

6	Postcode/Zipcode	E2L 3T5
7	Phone	+1 (506) 638 1300
8	Fax	+1 (506) 638 1335
9	Email	mugartet@canaportlng.com
10	Website	www.canaportlng.com
3.5	Terminal operator, if different from owner	Repsol
3.6	Name of first point of contact for terminal operator	Martin Ugarte
3.7	Terminal operator full style contact address	
1	Address Line 1	2530 Red Head Road
2	Address Line 2	PO Box 2029
3	Address Line 3	
4	City	Saint John
5	County/State	New Brunswick
6	Postcode/Zipcode	E2L 3T5
7	Phone	+1 (506) 638 1300
8	Fax	+1 (506) 638 1335
9	Email	mugartet@canaportlng.com
10	Website	www.canaportlng.com

#### 4 TPQ Accountability

4.1	Name and title of person completing this TPQ	Martin Ugarte, Operations Manager
4.2	Full style contact details of person completing this TPQ	
1	Address Line 1	2530 Red Head Road
2	Address Line 2	PO Box 2029
3	Address Line 3	
4	City	Saint John
5	County/State	New Brunswick
6	Postcode/Zipcode	E2L 3T5
7	Phone	+1 (506) 638 1300
8	Fax	+1 (506) 638 1335
9	Email	mugartet@canaportlng.com

#### 5 Port Facility Security Officer Details

5.1	Does the port facility comply with the ISPS code?	
1		Yes
2	Port Facility Security Officer contact name	Fraser Forsythe
5.2	Port Facility Security Officer full style contact details	
1	Address Line 1	2530 Red Head Road
2	Address Line 2	PO Box 2029
3	Address Line 3	
4	City	Saint John

---

5	County/State	New Brunswick
6	Postcode/Zipcode	E2L 3T5
7	Phone	+1 (506) 638 1305
8	Fax	+1 (506) 638 1335
9	Email	fforsythe@canaportlng.com

## 6 Operational Integrity Details

<p>6.1 State details of any pre-arrival/operational clearance formalities for vessels</p>	<p>Pre-arrival requirements:  Before a vessel starts in-going manoeuvres several aspects have to be agreed related to documentation, checks and communications. At least 24 hours before arrival, vessel must give the characteristics of the vessel to APA pilot dispatch and pilots via email (sjpilots@nb.sympatico.ca and dispatch@atlanticpilotage.com) or fax using Master / Pilot Exchange Form. Pilots will be given tailored local weather forecasts via email which will be used for climatic related decisions for jetty. CanaportLNG will provide the weather forecast to all parties.  The following documentation must be available for port authorities to get port entrance clearance:</p> <ul style="list-style-type: none"> <li>- Arrival information</li> <li>- Crew list</li> <li>- Cargo manifest</li> <li>- Cargo plan</li> <li>- Health certificate</li> <li>- IMO No.</li> <li>- IMO Cargo Fitness Certificate</li> <li>- Bills of lading</li> <li>- Berthing request</li> <li>- Letter illustrating vessel's ETA</li> <li>- Vessel Travel Letter</li> <li>- Letter for custom department</li> <li>- Letter for quarantine department</li> <li>- Travel license sealed by marine inspection and control department</li> </ul> <p>The following pre-arrival checks and communications will be observed by the LNG vessels:</p> <ul style="list-style-type: none"> <li>- Inform the maritime administration and the terminal 24 hours before arrival.</li> <li>- Estimated Arrival Time (ETA) confirmation</li> <li>- Estimated time of pilot boarding 12 hours, confirmation 4 hours notice to APA dispatch.</li> <li>- Communications with Fundy Traffic (Vessel Traffic Management System) is required upon entering Bay of Fundy Vessel Traffic Services Zone on VHF Channel 14 to notify expected arrival time, draft, cargo, length and other data as required by the Eastern Canada Vessel Traffic Services Zone Regulations (ECAREG). Communications within the Port of Saint John are done on the VTMS Sector Frequency (VHF Channel 12).</li> <li>- Verification of pilot, tug masters and other nautical staff availability</li> <li>- Weather and metocean forecast that will extend at least 24 h. after expected departure time</li> <li>- Verification of the most recent applicable edition of Radio Aids to Marine Navigation</li> <li>- Parts 3 and 4 <a href="http://www.ccg-">http://www.ccg-</a></li> </ul>
---	--

[gcc.gc.ca/eng/CCG/MCTS\\_Radio\\_Aids](http://gcc.gc.ca/eng/CCG/MCTS_Radio_Aids)

6.2 Has the terminal completed an assessment using the standard industry process?

1 Yes

2 If 'Yes', state date completed 15 September 2009

6.3 Additional comments or information

N/A.



# **Oil Companies International Marine Forum**

## **MTIS Programme**

### **Berth TPQ**

**Berth TPQ: 1**

ReportName 86928564-8688-4cf3-b7b9-118139087de6

**Terminal Name: Canaport LNG**

**Terminal Port: Saint John**

**Terminal Port Authority: Saint John Port Authority**

**Country: Canada**

**Berth Name: 1**

15 July 2015

## 1 Berth General

1.1	Berth name or number	1
1.2	Berth type	
1		Jetty - 'T' finger
2	If 'Other' please specify	
1.3	Terrestrial co-ordinates of manifold centreline	
1	Latitude	451219 North
2	Longitude	0655851 West
1.4	Berth users for liquid and gas cargoes	Owner and Operator.
1.5	Has a structural survey of the berth been undertaken, including its underwater structure?	
1		Yes
2	If 'Yes', state date of last survey	23 June 2009
1.6	Has an engineering (mooring and fendering) analysis of berth been undertaken?	
1		Yes
2	If 'Yes', state date of last analysis	01 December 2012
1.7	Additional comments or information	N/A.

## 2 Berth Approaches

2.1	Is pilotage compulsory?	
1		Yes
2	If 'Yes', state if any vessels are exempted	Mandatory for all vessels.
2.2	State distance from pilot station(s) to berth	<p>Proceeding to the Canaport LNG Terminal will embark the pilot at a position on a line bearing 295° True from a position 45° 08' 48" N, 66° 03' 39" W to 45° 09' 30" N, 66° 05' 48" W. This is the outer boarding station for vessels proceeding to the facilities. Outbound vessels will disembark the pilot at a position of 45° 10' 48" N, 66° 03' 42" W.</p> <p>Distance to berth: approx. 5 – 6 nautical miles.</p>
2.3	Is a waiting anchorage available?	
1		Yes
3	If 'Yes', state distance from waiting anchorage to berth	4 nautical miles
2.4	Controlling depth of water for transit to and from berth	
1	Water depth	26.00 Metres
2	State datum used	Chart Datum (CD)
3	If 'Other' please specify datum	
2.5	Date of latest survey from which transit depth has been determined	20 February 2007



2.6	Date next survey is due	20 February 2027
2.7	State Maximum Tidal Range in berth approaches	9.11
2.8	Is laden transit to and/or from the berth conducted using the tide?	
1		Yes
2	If 'Yes', state optimum transit window (i.e. at High Water, HW +/- 1 hr)	All LNG ships whether night or day, may use the one berthing window from 3 Hrs after LOW WATER to 2 Hrs before the next LOW WATER.
2.9	State details of any specific berthing and/or unberthing restrictions	<p>Wind:            Southerly Quadrants: 20 Knots.            Northerly Quadrants: 25 Knots.</p> <p>Significant wave height (Hs): 1.5 m.</p> <p>Wind limitations will be considered simultaneously with waves, currents, time periods and tides. A compatibility study will be performed prior to the vessel calling the Terminal.</p> <p>Visibility: 1 nm.</p> <p>Extreme flood condition is to be avoided in any case.</p>
2.10	Minimum under keel clearance (UKC) in berth approaches	
1	Value	26.00 Meters
2	Percentage	0.00 Vessel static draft
3	Specify other UKC criterion where applicable	N/A
2.11	Absolute maximum draught in berth approaches, if applicable	26.00
2.12	State minimum vertical clearance of any bridges/power cables/vertical obstructions	
1	Vertical clearance	200.00 Metres
2	State datum used	Chart Datum (CD)
3	If 'Other' specify other datum used	
4	Further details	Not applicable.
2.13	Does the port require tankers and gas carriers to be escorted by tugs?	
1		Yes
2	If 'Yes', state whether Active or Passive escort is employed and the maximum towline force that the tug is able to generate	Active, 70 tn. of bollard pull.
2.14	Additional comments or information	N/A.

### 3 Water Depth Alongside

3.1	Minimum controlled water depth alongside berth at chart datum	
1	Water depth	26.00 Metres
2	State datum used	Chart Datum (CD)
3	If 'Other' specify datum	

3.2	Date of latest survey from which alongside depth has been determined	20 February 2007
3.3	Date next survey is due	20 February 2027
3.4	Minimum static under keel clearance (UKC) alongside berth	
1	Value	26.00 Meters
2	Percentage	0.00 Vessel static draft
3	Specify other UKC criterion where applicable	N/A
3.5	State range of water densities at berth	
1	From	1025.00
2	To	1025.00
3	Further details	N/A
3.6	Type of bottom alongside berth	
1		Rock
2	If 'Other' please specify	
3.7	Absolute maximum draft alongside, if applicable	26.00
3.8	State maximum tidal range at berth, if applicable	9.11
3.9	Are 'over-the-tide' cargo handling operations permitted at the berth?	No
3.10	Does the berth location experience water-level anomalies?	
1		No
2	Provide details	
3.11	Additional comments or information	N/A.

#### 4 Limiting Vessel Dimensions

4.1	Summer deadweight	
1	TPQ NA Selector	Not applicable
2	Minimum	
3	Maximum	
4.2	Berthing displacement	
1	TPQ NA Selector	Applicable
2	Minimum	52860.00 Metric Tonnes
3	Maximum	175640.00 Metric Tonnes
4.3	Alongside displacement	
1	TPQ NA Selector	Applicable
2	Minimum	52860.00 Metric Tonnes
3	Maximum	175640.00 Metric Tonnes
4.4	State any deadweight/displacement exceptions	
1	TPQ NA Selector	Not applicable
2		
4.5	Cubic capacity (gas carriers)	
1	TPQ NA Selector	Applicable

2	Minimum	75000.00 Cubic metres
3	Maximum	266000.00 Cubic metres
4.6	Length over all (LOA)	
1	TPQ NA Selector	Applicable
2	Minimum	216.00 Metres
3	Maximum	345.00 Metres
4.7	Beam	
1	TPQ NA Selector	Applicable
2	Minimum	33.90 Metres
3	Maximum	55.00 Metres
4.8	Minimum parallel body length (PBL)	
1	TPQ NA Selector	Applicable
2		110.00 Metres
4.9	Minimum PBL forward of manifold	
1	TPQ NA Selector	Applicable
2		50.00 Metres
4.10	Minimum PBL aft of manifold	
1	TPQ NA Selector	Applicable
2		60.00 Metres
4.11	Bow to centre of manifold (BCM)	
1	TPQ NA Selector	
2	Minimum	
3	Maximum	
4.12	Stern to centre of manifold (SCM)	
1	TPQ NA Selector	
2	Minimum	
3	Maximum	
4.13	Freeboard	
1	TPQ NA Selector	
2	Minimum	
3	Maximum	
4.14	Manifold height above water	
1	TPQ NA Selector	Applicable
2	Minimum	11.30 Metres
3	Maximum	37.21 Metres
4.15	Manifold to shipside rail distance	
1	TPQ NA Selector	Not applicable
2	Minimum	
3	Maximum	
4.16	Height of manifold above deck or drip tray	

1	TPQ NA Selector	Not applicable
2	Minimum	
3	Maximum	
4	Specify whether height is from the deck or the drip tray	
4.17	Manifold spacing	
1	TPQ NA Selector	Applicable
2	Minimum	2.50 Metres
3	Maximum	4.00 Metres
4.18	Maximum air draft alongside	
1	TPQ NA Selector	No restrictions
2		
4.19	Vessel's minimum derrick/crane Safe Working Load (SWL)	
1	TPQ NA Selector	Not applicable
2		
4.20	Additional comments or information	

## 5 Mooring and Berthing Information

5.1	State availability and specifications of tugs and mooring craft required for berthing and/or unberthing.	<p>TUGS FLEET:</p> <p>3 tugs of 5,364 BHP available with two Aquamaster, Z Drive propellers with minimum bollard pull of 70 t.</p> <p>1 tug of 5,000 BHP, with two Aquamaster, Z Drive propellers with a minimum bollard pull of 65 t.</p> <p>2 tugs of 4,004 BHP, with two Aquamaster, Z Drive propellers with a minimum bollard pull of 55 t.</p> <p>Tug composition consists of three escorting tugs of ASD (Azimuth Stern Drive) type of at least 70 t. of bollard pull, irrespective of the vessel capacity. One will be made fast at the stern since the pilots have boarded the vessel and the other one will be made fast at the bow point so vessel position can be assured 2 to 3 nautical miles (at pilots discretion) away from the jetty and LNG carrier maneuvering capabilities can be maintained. Tugs will be required until LNG carrier is safely berthed on the jetty.</p> <p>Pilots could require the assistance of a fourth tugboat with a minimum bollard pull of 50 t.</p>
5.2	Are ship's or tug's lines used?	
1	Ship/Tug	Tug's Lines
2	Comments	The tug's lines are to be used while assisting the LNG carrier. The lines of the escort tugs are optimized for working in higher sea states. The breaking strength will be at least 3 to 4 times the bollard pull.

5.3	Type of fenders installed at berth	
1		Cell Type
2	If 'Other' please specify	
5.4	State orientation of vessel alongside berth	Either Port & Starboard Side To
5.5	At buoy moorings, state which side hose is normally connected	
1		Not applicable
2	If 'Other' please specify	
5.6	Minimum mooring arrangement	<ul style="list-style-type: none"> <li>- windage below 5,000 m2 under ballast condition: A minimum of 12 mooring lines will be deployed, however it is recommended to place 14 lines if possible.</li> <li>- windage over 5,000 m2 under ballast condition: A minimum of 14 mooring lines will be deployed, however it is recommended to place 16 lines if possible.</li> <li>- vessels over 115,000 GRT: A minimum of 16 lines should be deployed.</li> <li>- Qmax (approximate 168,000 GRT): A minimum of 18 lines should be deployed.</li> </ul>
5.7	Describe any additional mooring requirements	None
5.8	Are there any restrictions using wire mooring ropes?	
1		No
2	If 'yes', provide details of restrictions in wire moorings as part of the mooring pattern	
5.9	Are there any restrictions using synthetic mooring ropes?	
1		No
2	If 'yes'; provide details of restrictions in synthetic mooring ropes as part of the mooring pattern	
5.10	Are there any restrictions on using high modulus synthetic mooring ropes?	
1		No
2	If 'yes' provide details	
5.11	Details of any specific mooring equipment required for any vessel utilising the berth	All mooring lines should be of the same material. Both 11 m and 22 m nylon/synthetic tails are acceptable.
5.12	Does the terminal require the vessel to rig Emergency Towing Off Pennants (ETOPs) while at the berth?	
1		No
2	If 'Yes', provide details of particular requirements regarding ETOPs.	
5.13	Details of any shore-provided mooring equipment	None.
5.14	Are berthing aids provided?	
1		Yes

2	If 'Yes', state type of aids	<p>Approach Sector Lights                  JETTY DOLPHIN LIGHTS                  BLACK ROCK CAUTIONARY LIGHT                  13 m CONTOUR BUOY</p> <p>Docking Aid System composed of two Dual Rotating Display Boards (one on each side of the jetty) with the following information:</p> <ul style="list-style-type: none"> <li>- Distance of the ship from the jetty. The distance is in meters to 1 decimal place.</li> <li>- Speed of approach of the ship towards the jetty. The speed is in cm/s.</li> <li>- Angle of the vessel to the jetty and its orientation.</li> <li>- Annunciation for high speeds of approach.</li> </ul>												
5.15	State allowable speed of approach if applicable													
1		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Vessel displacement</th> <th style="width: 50%;">Maximum vessel speed acceptable</th> </tr> </thead> <tbody> <tr> <td>Less than 50,000 t.</td> <td style="text-align: center;">0.20 m/s</td> </tr> <tr> <td>50,000-75,000 t.</td> <td style="text-align: center;">0.15 m/s</td> </tr> <tr> <td>75,000-100,000 t.</td> <td style="text-align: center;">0.12 m/s</td> </tr> <tr> <td>Over 100,000 t.</td> <td style="text-align: center;">0.10 m/s</td> </tr> <tr> <td>1</td> <td style="text-align: center;">0.20 Knots</td> </tr> </tbody> </table>	Vessel displacement	Maximum vessel speed acceptable	Less than 50,000 t.	0.20 m/s	50,000-75,000 t.	0.15 m/s	75,000-100,000 t.	0.12 m/s	Over 100,000 t.	0.10 m/s	1	0.20 Knots
Vessel displacement	Maximum vessel speed acceptable													
Less than 50,000 t.	0.20 m/s													
50,000-75,000 t.	0.15 m/s													
75,000-100,000 t.	0.12 m/s													
Over 100,000 t.	0.10 m/s													
1	0.20 Knots													
5.16	Is a mooring tension monitor fitted?	Yes												
5.17	Are mooring hook quick release arrangements provided?	Yes												
5.18	Chain stopper requirements													
1	Applicable	No												
2														
5.19	Largest ship handled at berth to date	LNG/C Mozah IMO # 9337755												
5.20	Additional comments or information	No comments.												

## 6 Berth Equipment and Facilities

6.1	Number, type and size of cargo transfer connections	<p>Arrangement of Unloading Arms (Looking to seaward)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>#</th> <th colspan="3">1</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>3</td> <td>4</td> <td>1</td> </tr> <tr> <td>Liquid or Vapour</td> <td colspan="3" style="text-align: center;">L</td> </tr> <tr> <td>L/V</td> <td>V</td> <td>L</td> <td></td> </tr> <tr> <td>PERC fitted</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>QC/DC fitted</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Nominal Diameter (ins)</td> <td colspan="3" style="text-align: center;">16"</td> </tr> <tr> <td>16"</td> <td>16"</td> <td>16"</td> <td></td> </tr> <tr> <td>Flange standard</td> <td colspan="3" style="text-align: center;">ANSI ANSI</td> </tr> <tr> <td>ANSI</td> <td>ANSI</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>150#</td> <td></td> </tr> <tr> <td>150#</td> <td>150#</td> <td>150#</td> <td></td> </tr> </tbody> </table>	#	1			2	3	4	1	Liquid or Vapour	L			L/V	V	L		PERC fitted				Yes	Yes	Yes	Yes	QC/DC fitted				Yes	Yes	Yes	Yes	Nominal Diameter (ins)	16"			16"	16"	16"		Flange standard	ANSI ANSI			ANSI	ANSI					150#		150#	150#	150#	
#	1																																																									
2	3	4	1																																																							
Liquid or Vapour	L																																																									
L/V	V	L																																																								
PERC fitted																																																										
Yes	Yes	Yes	Yes																																																							
QC/DC fitted																																																										
Yes	Yes	Yes	Yes																																																							
Nominal Diameter (ins)	16"																																																									
16"	16"	16"																																																								
Flange standard	ANSI ANSI																																																									
ANSI	ANSI																																																									
		150#																																																								
150#	150#	150#																																																								
6.2	List grades handled at berth	Crude Oils/Condensates, LNG																																																								

2	State specific grades handled at berth (e.g. Ekofisk crude oil, Unleaded Gasoline, Jet A1).	N/A.
6.3	State transfer rate restrictions and back pressure for each cargo grade	Limits per arm.  Product handled: LNG NG Pressure Working: 5 barg 0.15 barg Design: 18.9 barg 18.9 barg Flow rate: 4,133 m3/h 10,500 m3/h  Max. total LNG flow rate: 12,400 m3/h (3 x 4,133 m3/h)
6.4	Are transfer connections fitted with insulation flanges?	Yes
1		
2	Provide details	Electrical insulation in unloading arms.
6.5	State storage type for LPG	Not applicable
6.6	Describe any terminal-specific requirements for vessel manifolds	N/A.
6.7	Is berth fitted with a vapour manifold connection?	Yes
1		
2	If 'Yes' state type and size of vapour connection	16"
3	State cargo types for which it is required to use vapour connection (if applicable)	LNG.
6.8	State throughput rate(s) of vapour recovery system	12,000 mmsfcd.
6.9	Are Powered Emergency Release Couplings (PERCS) installed to the cargo transfer arms?	Yes
1		
2	Supply details	ESD 1 Forward: 24° Aft: 128° 15° Seawards: 128° ESD 2 Forward: 33° Aft: 143° 25° Seawards: 143°
6.10	Does the berth have an emergency shutdown (ESD) capability that can be activated by the ship?	Yes
1		
2	If 'yes' provide details	As per SIGTTO standard.
6.11	Describe access arrangements between ship and shore.	Jetty is equipped with one electro hydraulic gangway located at east side of the loading platform, on berthing dolphin BD3. Manufacturer / Supplier: VERHOEF ALUMINIUM SCHEEPSBOUW INDUSTRIE B.V. Working range at ship's rail: Height above Chart Datum:  Max: +30.0 m Min: +3.5 m  Distance between gangway and vapour return arm: between 32.5 m to 47.5 m Size of gangway deck ladder: 1.50 m x 1.24 m x 3.52 m (W x D x H)
6.12	Does the berth have pollution response equipment?	

1		No
2	If 'yes' provide details	
6.13	Additional comments or information	N/A.

## 7 Berth Operations

7.1	What is the primary and backup communication system between ship and terminal during cargo operations?	<ul style="list-style-type: none"> <li>- Shore supplied UHF radio: one Terminal representative to stay on board for the duration of the unloading.</li> <li>- Ship/shore communication link by telephone.</li> <li>- VHF channel 77 to liaise with stand by tug boat.</li> </ul>
-----	--	--

7.2	Is it required that terminal or shore representatives stay on board during operations?	
1		Yes
2	If 'Yes', state requirements including number of persons and their roles	<ul style="list-style-type: none"> <li>- Loading Master.</li> <li>- Mooring Master.</li> </ul>

7.3	Specify weather/environmental restrictions for stopping cargo operations, disconnecting hoses or arms and vacating the berth?	<table border="1"> <thead> <tr> <th>Activity</th> <th>Wind speed</th> <th>Wave</th> </tr> </thead> <tbody> <tr> <td>NORMAL OPERATION</td> <td></td> <td>(knots)</td> </tr> <tr> <td>) Unloading</td> <td>Height (m)</td> <td></td> </tr> <tr> <td>erly hemisphere: 20</td> <td></td> <td>South 1.5</td> </tr> <tr> <td>Northerly hemisphere: 25</td> <td></td> <td>1.5</td> </tr> <tr> <td>Stop unloading</td> <td></td> <td></td> </tr> <tr> <td></td> <td>32</td> <td></td> </tr> <tr> <td></td> <td>2.5</td> <td></td> </tr> <tr> <td>Disconnection of arms</td> <td></td> <td></td> </tr> <tr> <td></td> <td>36</td> <td></td> </tr> <tr> <td></td> <td>2.5</td> <td></td> </tr> <tr> <td>Resumption of cargo unloading</td> <td>25</td> <td></td> </tr> <tr> <td></td> <td>2.0</td> <td></td> </tr> <tr> <td>Vessel mooring limits at the berth</td> <td>50</td> <td></td> </tr> </tbody> </table>	Activity	Wind speed	Wave	NORMAL OPERATION		(knots)	) Unloading	Height (m)		erly hemisphere: 20		South 1.5	Northerly hemisphere: 25		1.5	Stop unloading				32			2.5		Disconnection of arms				36			2.5		Resumption of cargo unloading	25			2.0		Vessel mooring limits at the berth	50	
Activity	Wind speed	Wave																																										
NORMAL OPERATION		(knots)																																										
) Unloading	Height (m)																																											
erly hemisphere: 20		South 1.5																																										
Northerly hemisphere: 25		1.5																																										
Stop unloading																																												
	32																																											
	2.5																																											
Disconnection of arms																																												
	36																																											
	2.5																																											
Resumption of cargo unloading	25																																											
	2.0																																											
Vessel mooring limits at the berth	50																																											

7.4	Are there any restrictions regarding tank cleaning/Crude Oil Washing (COW) operations at the berth?	
1		Yes
2	If 'Yes' provide full details of these restrictions	To be agreed with the terminal.

7.5	Are there any berth specific requirements regarding tanker inerting procedures?	
-----	---	--



1		No
2	If 'Yes', state requirements	
7.6	Is there a temperature limit for cargo handled?	
1		Yes
2	If 'Yes', state temperature limits	LNG: -159 to -157.7 C (-254.2 F to -251.9 F) NG: -155 to -80 C (-247 to -112 F)
7.7	Is it permitted for vessels to undertake double-banked operations alongside the berth?	
1		No
2	If 'Yes', state limiting criteria	
7.8	Is vessel required to pump water ashore or receive water on board for line clearance purposes?	
1		No
2	If 'Yes', provide operational details	
7.9	Can the berth be used for Ship-to-Ship transfers using terminal facilities?	
1		No
2	Provide details	
7.10	State details regarding any environmental restrictions applicable at the berth	Ballast water Incoming vessels to be aware of Canada's Ballast Water Control and Management Regulations as well as the accompanying Guide to Canada's Ballast Water Control and Management Regulations.
7.11	Are there any restrictions regarding Hydrogen Sulphide content in Cargo Tanks?	
1		Yes
2	If 'Yes', state restriction	LNG: Not acceptable. Crude Oil: Terminal to be notified with the SDS of the product.
7.12	Are there any restrictions regarding Mercaptan content in Cargo Tanks?	
1		Yes
2	If 'Yes', state restriction	LNG: Not acceptable.
7.13	Are there any restrictions on handling stores when a ship is moored alongside berth?	
1		Yes
2	If 'Yes', state restriction	Food and spare parts may be loaded over side before and after discharge, never during operations. This option has been included in the Marine Facility Security Plan, and must be conducted via re-supply launch alongside port on starboard quarters.
7.14	Additional comments or information	Bunkering is not allowed. No ships repairs will generally be allowed while alongside the terminal. If emergency repairs are required, the vessel may remain at berth if approval to do so is granted by Port Authority. Otherwise the vessel must vacate the Jetty and proceed to the designated anchorage area.

## 8 Available Services

8.1	Are Fuel Oil bunkers available?	
1		No
2	If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck)	
8.2	Are Diesel Oil bunkers available?	
1		No
2	If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck)	
8.3	Are Intermediate Oil bunkers available?	
1		No
2	If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck)	
8.4	Is fresh water available?	
1		Yes
2	If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck)	Barge.
8.5	Are slop reception facilities available?	
1		No
2	If 'Yes', state how received (e.g. Ex-Pipe, barge, truck)	
3	State capacity of slop reception facilities (if applicable)	
4	State any specific exclusions for slop receipts (e.g. chemicals, detergents, cleaning agents)	
8.6	Are dirty ballast reception facilities available?	
1		No
2	If 'Yes', state how received	
3	State capacity of dirty ballast reception facilities	
8.7	Are engine room sludge and bilge reception facilities available?	
1		No
2	If 'Yes', state how received (e.g. Ex-pipe, barge, truck)	
8.8	Are garbage reception facilities available at the berth.	
1		No
2	If 'Yes', provide details	
8.9	Additional comments or information	No inerting facilities available.

## 9 Berth Low Temperature Impact

9.1	What is the typical range of temperatures the terminal operates in during a winter season?	10C to -35C
9.2	Which months of the year can ice be expected?	Ice free year round.
9.3	Specify any terminal requirements for vessel Ice Class notation and winterisation capabilities	No requirements for Ice Class.
9.4	State any limitations for cargo operations in sub-zero temperatures	No limitation.
9.5	State the minimum allowable ambient temperature for safe cargo operations	Not defined.

---

9.6	State the minimum temperature of cargoes handled	-170C.
9.7	State the minimum temperature for the emergency shut-down system to operate safely	-170C.
9.8	Does the terminal have its own resources for conducting icebreaker escort	
1		No
2	If 'Yes' provide details and specify how they can be requested	Not applicable.
9.9	Are there icebreakers available to operate in the terminal area	
1		No
2	Specify details (e.g. Name/IMO Nr/GRT/Power/Ice Class)	Not applicable.
9.10	Does the terminal have ice-capable tugs and support craft	
1		No
2	Specify details (e.g. Name/IMO Nr/GRT/Power/Ice Class)	Not applicable.
9.11	Does the terminal have specific requirements for the vessel speed and manoeuvrability characteristics in ice?	
1		No
2	If 'Yes', provide details	Not applicable.
9.12	Does the terminal provide its own ice navigator/advisor?	
1		No
2	If 'Yes', provide details of how the service may be requested	Not applicable.

9.13 Additional comments or information

## COLD WEATHER PRECAUTIONS

DURING COLD WEATHER, PRECAUTIONS SHOULD BE TAKEN TO PREVENT EQUIPMENT AND SYSTEMS FROM FREEZING.

MONITOR THE WEATHER CONDITIONS. IF THERE IS A POTENTIAL FOR FREEZING SPRAY ADJUST COURSE AND SPEED TO AVOID THE BUILD UP OF ICE DUE TO WATER SPRAY ON THE UPPER DECK.

IDENTIFY ALL EQUIPMENT AND PIPING THAT COULD SUFFER DAMAGE IN COLD WEATHER. THERMOMETERS PLACED IN EXPOSED AREAS MAY BE USEFUL FOR SUCH IDENTIFICATION.

ATTENTION SHOULD BE GIVEN TO PNEUMATIC VALVES AND CONTROL SYSTEMS, FIRE LINES AND HYDRANTS, STEAM DRIVEN EQUIPMENT ETC.

IF FITTED, HEATING ARRANGEMENTS SHOULD BE USED.

ANY WATER THAT HAS COLLECTED IN A SYSTEM SHOULD BE DRAINED OFF. COOLING WATER SYSTEMS SHOULD BE DOSED WITH ANTI-FREEZE OR DRAINED.

SALT AND SAND WALKWAYS AND DECK LADDERS TO REDUCE THE HAZARD OF SLIPPING.

KEEP ROPE PRODUCTS UNDER SHELTER FOR AS LONG AS POSSIBLE SINCE ROPE MOORING TAILS, ROPES, AND PILOT LADDER COULD FREEZE IN COLD WEATHER.

ACTIVATE ELECTRO-HYDRAULIC MOTORS TO ANCHOR WINDLASS AND MOORING WINCHES. ALLOW WINCH HEADS TO ROTATE SLOWLY AND CONTINUOUSLY FOR A FEW HOURS PRIOR ARRIVAL.

ENSURE BOTH ANCHOR WINDLASSES ARE FREE OF ICE AND READY TO USE IN EMERGENCY.

WATER IN THE FIRE MAIN SYSTEM SHOULD BE CIRCULATED CONTINUOUSLY, WHERE POSSIBLE.

SPECIAL ATTENTION MUST BE PAID TO EMERGENCY SHOWERS AND EYE WASH STATIONS TO ENSURE THE AVAILABILITY OF FACILITIES.

REDUCE THE FLOW OF OUTSIDE AIR INTO THE MACHINERY SPACES.

WHEN BALLASTING, ENSURE THE TANK VENTS ARE OPERATING AS THE VENT PIPES MAY HAVE ICE BUILD-UP INSIDE.

TAKE SPECIAL CARE WHEN FILLING BALLAST TANKS TO AVOID OVERFLOWING TANKS.

10.1	Berth transparency	Berth is a piled jetty				
10.2	Specify datum used for height and depth measurements in this section	Chart Datum (CD)				
1						
2	If 'Other' please specify other					
10.3	Berth height above datum	13.67				
10.4	Berth heading	The orientation of the jetty berthing line is East 7° South (E7S).				
10.5	Width of the channel adjacent to the berth	220.00				
10.6	Position of mooring bollards and hooks					
	Hook/Bollard ID Number and Type	'x' dist to Fender Face (m)	'y' dist to Target Line (m)	Height (m)	SWL (tonnes)	
	MD1	215.00	41.10	14.30	125.00	
	MD2	155.00	41.10	14.30	125.00	
	MD3	125.00	41.10	14.30	125.00	
	BD1	60.00	7.80	14.50	125.00	
	BD2	30.00	7.30	18.50	125.00	
	BD3	30.00	7.30	18.50	125.00	
	BD4	50.00	7.80	14.50	125.00	
	MD4	105.00	41.10	14.30	125.00	
	MD5	135.00	41.10	14.30	125.00	
	MD6	195.00	41.10	14.30	125.00	
10.7	Position of mooring buoys					
10.8	Fender Location					
	Fender ID Number	'x' Dist to Target Line (m)	Elevation of Fenders (m)	Fender Width (m)	Fender Height (m)	Fender Contact Area (m2)
	BD1 Yokohama ABF-P 3200 mm H x 3200mm dia.	50.00	10.30	4.40	8.80	38.72
	BD2 Yokohama ABF-P 3200 mm H x 3200mm dia.	30.00	11.00	4.40	11.00	48.40
	BD3 Yokohama ABF-P 3200 mm H x 3200mm dia.	30.00	11.00	4.40	11.00	48.40

BD4	60.00	10.30	4.40	8.80	38.72
-----	-------	-------	------	------	-------

Yokohama  
ABF-P 3200  
mm H x  
3200mm  
dia.

## 10.9 Fender Reaction Data

Fender Id Number	Point No.	Compression (metres)	Load (tonnes)
BD1	1	0.32	81.17
BD1	2	0.64	120.00
BD1	3	0.96	176.00
BD1	4	1.28	238.00
BD1	5	1.60	311.00
BD1	6	1.92	434.00
BD1	7	2.08	550.00

10.10 Fender friction coefficient ( $\mu$ ) 0.20

10.11 State identity and horizontal position of loading arms

10.12 State loading arm operating limits

10.13 Additional comments or information