

NANAIMO MARINE TERMINAL

Information to Vessels

Current versions of approved documents are maintained online. Printed copies are uncontrolled

IMPORTANT

- Smoking is strictly prohibited outside designated smoking areas!
- Cargo operations require at least one qualified person to be stationed on deck during loading or discharge!
- In case of an oil spill or other emergency, cargo operations must be stopped immediately and the terminal control room must be informed!
- In case of any situation or incident that may possibly have impact on health and/or environmental conditions, the terminal control should be informed immediately on the emergency telephone number:

250-754-4461

or by the portable radio!

For more information

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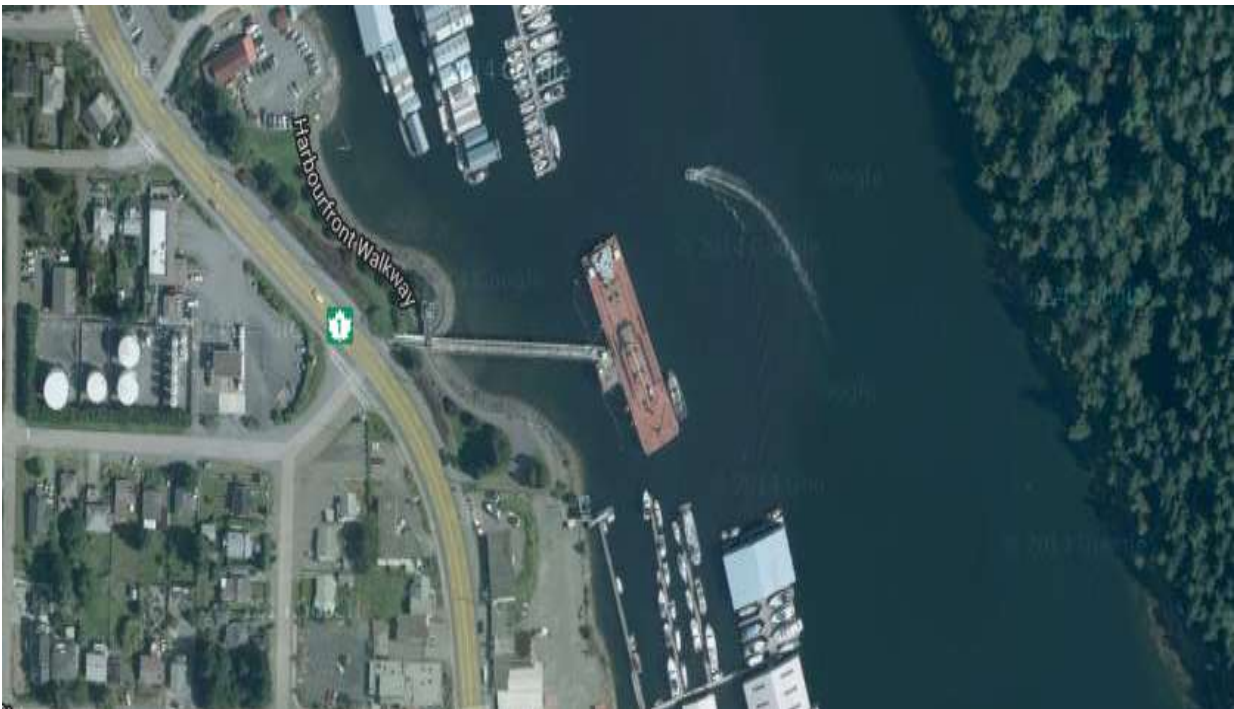
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GENERAL INFORMATION

1 GENERAL INFORMATION

1.1. LOCATION

- The facility is shown on Canadian Hydrographic Service Chart number 3457 Nanaimo Harbour, Departure Bay, in Latitude 49°11.2 North, longitude 123° 56.8 West. The facility is accessed via Departure Bay and is positioned on the west side of Newcastle Island Passage. It is situated in a highly sensitive environmental area and in very close proximity to two large marinas that have some "live aboard" craft in situ. Due to these circumstances, Suncor Energy prefers to avoid cargo transfer operations at night when possible.



1.2. BERTH DESCRIPTION

- The berth is utilized to offload clean petroleum products from small, mainly Canadian flag barges.
- The marine facility is "L" shaped and consists of an 82 metre walkway generally perpendicular to the shore, connected to a 12.5 metre wide, 9.0 metre deep dock.
- The face of the dock runs 153° /333° true and is generally parallel to the channel.

- The dock is constructed of timber and has steel piling. There are two breasting dolphins, one at the northerly end and one at the southerly end of the dock. The dolphins provide an effective breasting length of 38 metres.
- There is a short shore gangway to facilitate shore access when the vessels deck is close (plus or minus 1 metre) to the level of the dock. Vessels must provide a safe access to the shore, in accord with Canada Shipping Act Regulations, when the difference between the vessels deck and the docks elevation exceeds 1 metre. N.b. the elevation of the dock is approximately 7 metres above the water level at chart datum (lowest normal tide).

1.3. WATER DEPTH

- The density of the water is 1025 g/cm³ i.e. salt water.
- Master should refer to the Canadian Hydrographic Chart #3447, 2012 Edition. Departure Bay and its approaches are relatively deep water i.e. in excess of 20 metres. Minimum depth in the berth and its close approaches is 4.8 metres at chart datum. The Newcastle Island Passage Channel provides adequate water depth for vessels at drafts suitable for the berth. Masters are cautioned to favour the centre of Newcastle Island Passage Channel and to take particular care to avoid the unmarked 4 metre rock shoal to the east side of the channel in Latitude 49° 11 32” North, Longitude 123° 56 50” West.

1.4. SERVICES AT THE BERTH

- The berth is accessed by small, short haul tug and barge units and services are neither required nor available at the dock.

1.5. SECURITY

- The terminal only receives Canadian Flagged vessels.
- **PORT FACILITY SECURITY OFFICER (PFSO):**

Name:	Vic Bresett
Phone Numbers:	+1-250-716-9905 (office) / +1-250-741-6866 (mobile)
E-mail:	vbresett@suncor.com

1.5.1 Access to and from the vessel

- Access to the facility is controlled. There is no capability for vehicle access. No visitors are permitted to the facility or vessels at the facility without the prior approval of the terminal management. Authorized visitors must follow the directions of Suncor's dock attendant and comply with all applicable terminal safety rules and procedures. E.g. visitors to the dock must wear a hard hat and a buoyancy vest.

1.5.2 Access to the Terminal

1.5.2.1 - General

- Anyone who has been granted access to the premises has to proceed to and from the ship via the shortest route possible, using only the main road between the gate and the jetty.

1.5.2.2 - Crew

- Crew that is mentioned on the crew list has permission to leave and re-enter the terminal. They must carry identity papers to enable the security guard to check their identity versus the crew list.

1.5.2.3 - Ship chandlers and other visitors to the ship

- Access to the premises is only allowed to visitors, mentioned on the visitor list, issued by the agent or after approval by the vessel's master. All visitors have to identify themselves at the gate by means of a passport or driving licence. Government officials, in their official capacity, will be granted access upon presentation of their official ID-card.
- Furthermore anyone carrying goods that are to be delivered on board a ship must present documents (i.e. a waybill, packing list etc.) covering the carriage of such goods.

1.5.2.4 - Unaccompanied Luggage

- Depending on the security level we reserve the right to refuse unaccompanied luggage at the gate. Alternatively, when unaccompanied luggage is presented at the gate, we might invite the ship's security officer to personally take receipt of this luggage on behalf of its rightful owner.

1.6 WEATHER

- The facility is well protected and vessels are not normally exposed to adverse circumstances. There are no recorded incidents of mooring problems or damage to a vessel in the berth, or the dock, due to weather.

1.7 TIDAL RANGE AND CURRENT

- The average tidal range is about 3 metres and the large tidal range is about 5 metres.
- Tidal current is not significant with ebb and flow current running generally parallel to the face of the dock at a maximum rate of about 1 knot.

2

COMMUNICATIONS

2 COMMUNICATIONS

2.1 ESTIMATED TIME OF ARRIVAL (ETA)

- Masters are required to co-ordinate their arrival in accord with the agreement reached between the tug company and Suncor's scheduling office and to provide the terminal with one hours' notice prior to arrival. In instances when no arrival time has been pre-arranged, the Master shall notify the terminal upon departure from the loading terminal or the last port of call and provide the terminal with ETA's at 48 hours (if possible), 24 hours (mandatory), again at 12 and 4 hours and if ETA changes by +/- 1 hour and one hours' notice prior to arrival

2.2 USEFUL LOCAL NUMBERS

Suncor Nanaimo Terminal ETA's, pre-arrival information.	Tel 250-754-4461 Fax 250-754-7855
Suncor Marine Scheduler, Vancouver Operational matters, charter party issues, Voyage Orders	Tel 604-933-3026 Fax 604-933-3071
Wardill Marine Assist and Emergency Tug	250-754-9699 250-616-6000
Canadian Coast Guard, VTS, Emergencies, Spills	Canadian Coast guard – 1-800-889-8852 (24hrs) Marine radio – Channel 11
Oil Pollution Response (WCMRC)	604-294-9116 (24hrs)
Nanaimo Harbour Master	250-753-4146
Canadian Hydrographic Service – (Internet)	http://waterlevels.gc.ca/eng
Police Non-emergency	911 250-753-2345
Fire Non-emergency	911 250-753-7311
Ambulance Non-emergency	911 250-758-8181
Suncor Marine group – voyage orders	905 804 4500

2.3 CARGO TRANSFER COMMUNICATONS

- The Terminal provides portable radios for ship to shore communications on cargo transfer operations i.e. one to the barge supervisor; one to the dock supervisor and one to the terminal tank farm.

3

BERTHING AND MOORING

3 BERTHING AND MOORING

3.1 VESSEL SIZE AND RESTRICTIONS

- A key constraint at the facility is the available manoeuvring space for the tug and barge which must not encroach into the marina slips that are at each end of the berth. Adequate space must be maintained ahead of the barge and, when in the notch, the stern of the tug to allow craft to access the slipways and avoid tug propeller wash impact on craft in the slipways.

3.1.1 Tug/Barge Combination Criteria - Tug in Notch

Unit Particulars	Restrictions
Maximum LOA of unit Maximum displacement	110 metres 6000 tonnes

3.1.2 Barge Criteria - Tug on Bridle

Barge Particulars	Restrictions
Maximum LOA	84 metres
Maximum bow to cargo manifold	40 metres
Maximum stern to cargo manifold	44 metres
Maximum displacement	6000 tonnes

- Cargo transfer is via barge cargo hoses and barges may accommodate the bow to centre of manifold restriction with extra lengths of hose.

3.2 MAXIMUM DRAFT

Maximum Draft	4.3m*
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- At chart datum.
- Based on Canadian Hydrographic Chart #3447, 2012 edition.
- Based on an approximate under keel clearance of 10% of draft when in the berth.
- Vessel assumed to be upright and on an even keel.
- Masters are cautioned that in some cases the tug drafts may be deeper than the barge. The maximum draft applies to both the tug and the barge.

3.3 SPOT APPROVAL

- The parameters shown in 3.1 and 3.2 may be relaxed for an individual voyage subject to a marine technical review of the special circumstances of the relaxation request and written approval by Suncor Marine Management.

3.4 MOORING CRITERIA

- The berth is very well protected and does not have a history of mooring problems.
- The breasting dolphins provide an adequate breasting length. All mooring bollards are positioned on the dock which is relatively short. This does not permit breast lines to be effectively deployed from the extreme ends of the barge. Tug Masters should prepare their mooring plan accordingly.
- Mooring lines in the same service e.g. spring lines, should be of the same material and similar in length.
- All barge mooring wires must be fitted with synthetic mooring tails that meet the Oil Companies International Marine Forum (OCIMF) guidelines i.e. maximum 11 metres in length with a minimum breaking strength of 125% of the breaking strength of the wire to which they are attached and be connected to the wire with a mandel or tonsberg type shackle.
- Masters should ensure that, to the maximum extent possible, breast lines shall be deployed at right angles to the longitudinal axis of the vessel and spring lines shall be deployed parallel to the longitudinal axis of the vessel
- The responsibility for the adequate mooring of a barge rests with the Master but the terminal has an interest in ensuring that vessels are securely and safely moored. Appendix 1, Mooring Guideline Diagram is a minimum mooring arrangement that the terminal staff will expect vessels to deploy while at this facility.

3.5 BERTHING INFORMATION

- The berth face lies approximately 153° - 333° T and is generally parallel to the shore and the navigational channel.
- The breasting dolphins provide a good landing and the wooden pile fendering is adequate for normal berthing impacts.
- The cargo transfer manifolds are at the docks northerly corner.

- Water depths decrease inside the line of the face of the breasting dolphins at the south end of the berth.

3.6 BERTHING MANOEUVRES

- The berth is utilized by small, regularly trading, tug and barge units. Masters of U.S. tugs are reminded that Nanaimo is a compulsory pilotage area and that compliance with the provisions of the Pacific Pilotage Authority Regulations is mandatory.
- Masters may elect to berth the barge either side to. Barges are normally berthed starboard side to as tug Masters prefer to swing the empty barge on departing the berth.
- Care should be taken to land the barge on the breasting dolphin and not on the dock structure.
- The vessel must be positioned spanning both dolphins.
- The normal berthing manoeuvre is for the support tug (see Section 3.7) to rendezvous with the tug and barge in Departure Bay prior to the unit entering Newcastle Island Passage. The unit stays close to the centre of the channel taking particular care to pass well clear of the unmarked 4 metre rock shoal on the east side of the channel. Way is taken off the barge as it nears the berth and it manoeuvred alongside with special care to provide good clearance from the adjacent marine properties and minimize prop wash impact on craft at those properties.
- Tugs towing on bridle should exercise care to avoid entering the shallower water inside the line of the face of the breasting dolphins during the berthing manoeuvre.
- Tug Masters are reminded that they cannot berth barges from the notch if the combined length of the tug and barge unit will exceed 110 metres overall.
- The tug Master should exercise care during the unberthing manoeuvre to ensure:
 - that the tug is properly secured to the barge before the barge mooring lines are let go from the dock;
 - the barge is not swung on the breasting dolphin as the structure is not designed for this use
 - the barge is sufficiently clear of the dock to avoid the stern of the barge contacting the dock during its swing in the channel

3.7 TUG REQUIREMENTS

- The safe handling of the tug and barge is the responsibility of the tug Master. Suncor does expect that, in addition to the towing tug, a support tug will be utilized to escort the unit while navigating Newcastle Island Passage and to assist in berthing the barge. N.B. The towing tug Master may increase these requirements at their discretion e.g. to use a support tug for unberthing but shall not decrease these requirements without the written approval of Suncor’s Marine management.

Tug Parameters	Minimum Support Tug Requirements	
	Berthing	Unberthing
Horse Power	1	-

- The support tug shall be in attendance until the barge is securely moored.

3.8 LINESMEN

- An adequate number of shore linesmen will be provided to take ship and barge lines and perform dock mooring duties i.e. ships staff are not to be landed onto the dock to help berth the vessel.

Guideline	Berthing	Unberthing
Domestic Barge	1 person	1 person

3.9 ENVIRONMENTAL LIMITS

- Wind Limits: Berthing
While weather is not normally a factor at the berths, vessels will not be permitted to berth when wind forces are 30 knots or greater.
- Wind Limits: While Alongside
Tug Masters are cautioned that unberthing and navigating Newcastle Island Passage in adverse weather conditions may be less safe than taking additional precautions to stay safely moored alongside. Masters should take precautions before adverse weather arrives in the area e.g. by departing the berth or deploying adequate supplemental moorings when wind limits are approaching 30 knots.

Deviations from this standard operating procedure must be authorized using the Management of Change procedure. Deviations must be documented and documentation must include the relevant facts supporting the deviation decision.

4

RULES AND REGULATIONS

4 RULES AND REGULATIONS

4.1 GENERAL FEDERAL GOVERNMENT REQUIREMENTS

- Masters are required to operate their vessels in compliance with Canadian Legislation and Regulations while in Canadian waters. Many of Canada's marine requirements are based on IMO and ILO standards. Certain requirements are, however, unique to Canada and Masters of non-Canadian vessels should ensure that their vessel's agent informs them of distinct Canadian requirements.

4.2 PORT OF NANAIMO REGULATIONS

- These regulations include specific requirements governing the reporting, transportation and transfer of dangerous goods within the harbour and other requirements that encompass all vessel movement within the harbour. Bulk petroleum is included as dangerous goods and the Masters of tugs towing bulk petroleum barges and the barge cargo transfer supervisor are required to take certain actions in order to be in compliance with the regulations.
- Masters of towing tugs and barge supervisors must operate in compliance with the Port of Nanaimo regulations. Copies of the document may be obtained from the Harbour Master.

4.3 SUNCOR NANAIMO TERMINAL RULES AND PROCEDURE

- Tugs and barges destined for the Terminal are required to have on board, the latest edition of the "International Safety Guide for Oil Tankers and Terminals - ISGOTT".
- Suncor Energy is committed to safe operations and protection of the environment at its Nanaimo Terminal. Vessel staff are requested to immediately bring any unsafe condition or pollution risk to the attention of terminal staff and to take appropriate action to remedy the situation, including the suspension of cargo transfer activity.
- Nothing in these rules and procedures will relieve Masters and/or the barge supervisor* of their responsibilities in observing normal safety, fire prevention, pollution prevention and security precautions. Terminal staff are authorized to advise and request vessel staff to take additional measures to ensure safe operations should circumstances so require. Terminal staff are also authorized to suspend oil transfer operations in the event of an infringement of terminal rules and procedures or if any other hazardous situation is encountered.

- The following safety regulations have been developed in an effort to reduce the possibility of an incident involving fire, explosion, spills or other hazard:

*Where Master appears in these rules, it means Master of the towing tug. Barge Supervisor means the Transport Canada certified "Supervisor of Transfer Operations".

1. Safety Requirements:

- Masters and barge supervisors will be given a copy of the following Suncor Energy Nanaimo Terminal Rules and Procedures by the terminal operator and a signed acknowledgement will be required.

2. Safety Check List:

- On completion of berthing and prior to the commencement of de-ballasting or cargo transfer, the Ship Shore Safety Check List - Appendix 2 will be completed following a joint inspection by the terminal operator and a responsible tanker officer. This safety Check List is based on the recommendations of the "International Safety Guide for Oil Tankers and Terminals" (ISGOTT).
- When the tug is standing by alongside, or in the notch, many of the items in the Vessel/Terminal Safety Checklist apply to the tug. All items marked T must be answered by the tug Master in addition to the barge supervisor.

3. Gangway:

- The barge gangway or ladder, when required to be deployed, must be in good condition and of an appropriate length for safe access between ship and shore.

4. Barge Decks:

- Walkways required for accessing cargo systems, deck machinery and emergency equipment shall be kept clear of obstructions, and at all times provide a safe walking surface.

5. Tug Readiness:

- The towing tug shall remain in attendance during the barge's stay alongside the terminal. The tug must be located in close proximity to the facility for rapid deployment to the barge as required. In the event that the tug remains alongside the barge, it must comply strictly with rules to control potential ignition sources (see Rule 23).

6. Tug Engine's Readiness:

- The tug's main engines, steering machinery and other equipment essential for manoeuvring shall be maintained in a state of readiness for vacating the berth under full engine power at short notice.

7. Repairs:

- No hot work is to be performed on board the tug or the barge while alongside the terminal. The testing of radar, radio equipment and other electrical equipment is prohibited unless written permission is received from the terminal supervisor. Tank cleaning and gas freeing shall not be carried out alongside without written approval from the terminal supervisor. Chipping and scraping on the deck or hull is prohibited.

8. Staffing:

- Sufficient qualified crew members shall be provided for safe handling of cargo, for the tending of moorings, for effective firefighting and for moving the vessel in the event of an emergency on the tug or the dock. A barge supervisor shall be on duty on the barge throughout the transfer operation and the barge supervisor shall be supplemented by deck hands for mooring, unmooring, adjustment of moorings or other duties, when necessary. The barge supervisor's duty period must not exceed 12 hours without relief in any 24 hour period for any transfer operation.

9. Barge Moorings:

- Tug and/or barge personnel must frequently monitor and carefully tend the barge moorings to ensure that the vessel is safely secured having regard for the weather and current conditions.

10. Tug/Barge/Terminal Communications:

- Communication between the terminal and vessel will be by portable UHF radios. These shall be tested and found satisfactory before transfer operations commence. The barge supervisor and the terminal operator shall confirm with each other that the communication system and signals for controlling the operations are understood by all personnel involved prior to the commencement of the cargo transfer. See Section 5.3 and Appendix 3.
- In the event of a total breakdown of radio communication between the terminal and the barge during cargo transfer operations, then these operations shall be immediately suspended and not resumed until satisfactory communications are re-established.

11. Smoking:

- Smoking is strictly prohibited while at the berth except in designated areas which have been jointly approved by the tug master/the barge supervisor and by the terminal operator.

- Where smoking is approved on vessels, approval may be withdrawn by terminal operator if circumstances so warrant.
- Smoking notices specifying the designated smoking areas shall be exhibited in conspicuous places on board the vessel.

12. Matches and Lighters:

- The carrying and use of matches and lighters is prohibited on board the vessel while alongside the terminal except under controlled circumstances in the designated smoking areas.

13. Portable Electrical Equipment:

- Portable electric lamps and portable electric equipment for use in hazardous areas must be of an approved type.
- Any other electrical or electronic equipment of non-approved type - such as radios, mobile telephones, computers, radio pagers, calculators, photographic equipment are not to be active, switched on or used within hazardous areas.

14. Radio Equipment:

- The use of the vessels radio transmitting equipment while alongside is prohibited and the transmitting antennae should be earthed. This does not apply to permanently and correctly installed VHF and UHF equipment provided the power output is reduced to one watt or less.

15. Galley Stoves and Other Cooking Equipment:

- The use of galley stoves and other cooking equipment shall be permitted, provided the Master and terminal operator agree to their use.

16. Radar - Satellite Communication Terminals - Closed Circuit Television:

- The use of this equipment for any purpose is prohibited during the period that the vessel is alongside, except with the approval of the terminal operator.

17. Prevention of Sparking and Excessive Smoke:

- Soot blowing and excessive smoke are prohibited, and immediate steps shall be taken to eliminate any sparking from funnels/stacks.

18. Fire Precautions:

- Self-propelled barges and Non Self-propelled barges when similarly equipped

- The vessel's firefighting appliances, including main and emergency fire pumps, shall be kept ready for immediate use.
- Before operations commence, at least two fire hoses and jet/fog nozzles shall be laid out on the tank deck, connected to the fire main and tested as required by the terminal operator. The two fire monitors immediately adjacent to the manifold should be elevated, aligned towards the manifold area and made ready for immediate use. A fire pump shall maintain pressure on the fire main and also be ready for immediate use. Two portable fire extinguishers, preferably of the dry chemical type, shall be available in the proximity of the manifold area.
- Should fire occur on the vessel, the Master or responsible ship's officer shall make an Immediate signal by prolonged blasts on the barge's whistle and by sounding the fire alarm, and will also place the engine on standby. All transfer operations will cease immediately.
- Other Non-Self-propelled barges
- Every barge shall have the firefighting equipment, conveniently located for emergency use in the cargo tank area, as required under article VIII of Transport Canada's "Oil barge Standards" (i.e. two 9 litre foam fire extinguishers or approved equivalent).
- Should fire occur on the vessel, the barge supervisor shall immediately signal the terminal via the portable radio and by any other available means where fitted

19. Emergency Procedures:

- As required by the Ship Shore Safety Check List, the Master of the tug, barge supervisor and the terminal operator should discuss and agree upon the action to be taken in the event of an emergency or a fire on board either the tanker or the terminal. This should include means of communication and emergency procedures. *See Section 6.*

20. Operating Procedures:

- Procedures for cargo and/or ballast operations shall be agreed in writing between the terminal operator and the vessel supervisor. *See Appendix #3.*

21. Sea and Overboard Discharge Valves if fitted:

- Before any cargo or ballast transfer commences, sea and overboard discharge valves connected to the cargo or ballast system shall be closed and sealed with numbered seals. When sealing is not practicable, as with hydraulic valves, some suitable means of marking should be used to indicate that the valves are to remain closed. Seal numbers should be recorded on the Ship Shore Safety Check List. Except in an emergency, these seals shall be removed only with the approval of the terminal operator. A careful watch shall also be maintained to ensure that oil is not leaking through sea and overboard discharge valves.

22. Conditions to be observed on Board Barges, and as applicable, Tugs while alongside During Transfer Operations:

- (a) **Deballasting has to be carried out on the outboard side of the barge. In case this is not possible (due to the pipeline configuration of the vessel) an alternative is to be agreed during initial meeting with terminal representative.**
- (b) A barge supervisor, able to communicate effectively in English with the terminal staff, is required to be on deck or in the control room at all times. A continuous deck watch is to be maintained to ensure moorings are carefully tended and cargo transfer hoses are under observation at all times.
- (c) Towing off wires shall be made fast to bitts as far forward and aft as possible on the outboard side. The wires shall be in good condition, at least 1 1/8" (28mm) diameter, and secured with at least five turns or have the eye on the bitts. The outboard eye shall be maintained at a height of between 1 metre and 2 metres above the water at all times using a small diameter heaving line for this purpose.
- (d) All doors, portholes and openings leading from or overlooking the main deck to accommodation, machinery spaces (excluding pumproom) and forecabin shall be kept closed. Cargo control room doors opening on to or above the main deck may be opened momentarily for access.
- (e) All ventilators through which gas can enter accommodation or machinery spaces shall be suitably trimmed. Air conditioning units shall be stopped or operated in a recirculation mode. Window type air conditioning units shall be electrically disconnected.
- (f) The venting of the vessel's tanks shall take place only through the vessel's fixed venting system.
- (g) All cargo, ballast and bunker tank lids and tank washing openings shall be securely closed.
- (h) Sighting and ullage ports when not in use shall be kept closed. When any are open for operational reasons, the openings shall be protected by approved gauze flame screens. These screens shall be kept clean and in good condition. Portable screens should be a good fit.
- (i) All unused cargo and bunker connections shall be properly blanked, fitted with a

gasket and bolted with at a bolt in every hole at the manifold, and/or caps on camlock fittings. Stern cargo pipelines (if fitted) shall be isolated forward of the aft accommodation by blanking.

Any part of a slop transfer system which extends into machinery spaces shall be securely blanked and isolated on the tank deck.

- (j) If for any reason there is poor dispersion which results in an accumulation of gas on or about the decks of the vessel, transfer shall be stopped or the transfer rate relevant to a particular tank or tanks reduced at the discretion of either the terminal operator or the barge supervisor.
- (k) The vessel shall by day fly Flag “B” of the International Code, and by night an all-round red light.
- (l) The person in charge of the transfer operation on the vessel shall conduct inspections of adjacent water areas around the vessel frequently and at least once each hour to ensure that no oil has spilled or leaked into the water

23. Movements of Refuelling Vessels, Garbage Barge, Tugs, Workboats and Other Craft:

- During transfer operations no craft shall be allowed alongside the vessel unless approval has been given by the terminal operator and agreed to by the Master of the vessel. Tug Masters must consider their vessel to be in a hazardous area if they stay alongside the barge or in the notch and take particular care to comply with Rules 2, 7, 11, 12, 13, 14, 15, 16, 17, 19 and 22.

24. Emergency Escape:

- Means for emergency escape shall be provided on the offshore side of the vessel. For security reasons such means is to be stowed at deck level in such a manner as to be ready for expeditious use in an emergency. Such means shall be of adequate length to reach the water at all times.

25. Conditions Requiring Immediate Action:

- Ballast or cargo transfer operations shall not be started, or if started, shall be discontinued by either the barge supervisor or the terminal operator when any of the following conditions is noted:
 - (a) On the approach of and during electrical storms, heavy rainstorms or period of high winds, and in addition, all tank openings and cargo valves shall be closed.

- (b) If a fire occurs on the terminal, the vessel or any craft in close proximity, and in addition, all tank openings and cargo valves shall be closed.
- (c) If there are insufficient competent personnel aboard the vessel to safely handle the operation in progress, and to handle any emergency situation.
- (d) If a spill or leak occurs aboard the vessel or on the terminal.
- (e) If any other emergency situation arises which, in the opinion of the Tug Master, barge supervisor or the terminal operator, constitutes a potential hazard to either the ship or the terminal.

26. Avoidance of Oil Pollution:

- During transfer operations all scuppers shall be effectively plugged, fixed or portable manifold oil containment shall be in place, and no leakage or spillage of oil or water which can possibly contain oil shall be allowed to escape overboard. Scupper plugs may be removed to drain off accumulations of water periodically and replaced immediately after the water has been run off. Manifold containment should be drained before transfer operations commence. Any leakage or spillage must be reported immediately to the terminal operator.
- A supply of absorbent material shall be available at the manifold to facilitate the immediate cleanup of minor spills.
- No hazardous material shall be thrown overboard, nor shall any other objectionable material, either solid or fluid, be thrown overboard from the vessel.

27. Tank Lids:

- All cargo tank lids, ullage and sighting ports shall be securely closed before berthing or unberthing operations commence.

28. List:

- Excessive listing of the vessel must be avoided.

5

CARGO AND BALLAST TRANSFER

5 CARGO AND BALLAST TRANSFER

5.1 TERMINAL MANIFOLDS

- The shore cargo system has a maximum allowable pressure of 150 lb/square inch. N.B. the typical maximum at the shore manifold is 80 lb/square inch. All manifolds are fitted with insulating flanges
- The berth is exclusively used for the discharge of clean petroleum products. There are five manifolds to receive product. Barge hoses are utilized to effect the transfer. All shore manifolds are male camlock connections.

Information on the system is as follows:

Product	Pipeline Diameter	Manifold Size
Premium gasoline	4"	1 x 4"
Regular gasoline	4"	1 x 4"
Regular gasoline	6"	1 x 4"
Stove oil	4"	1 x 4"
Diesel (Furnace)	4"	1 x 4"

- All valves in the shore cargo system are manually controlled.

5.2 BARGE HOSES

- Barge hoses that are used to effect cargo transfers must be in good condition adequately supported, suitable for their intended service, and have been manufactured, marked and tested in accord with the requirements of the Canada Shipping Act
 - I.E. (a) Has a bursting pressure of not less than four times its maximum working pressure;
 - (b) Is clearly marked with its maximum working pressure;
 - (c) Has been tested hydrostatically to a pressure equal to one and one half times its maximum working pressure at least once during the year immediately preceding its use, and has successfully passed that test.

5.3 BARGE PUMPING SYSTEM

- The system is to be equipped with an emergency stop positioned so that terminal staff may shut down the barge pumps in an emergency without having to board the barge.

5.4 CARGO OPERATING PROCEDURE

- Before cargo transfer commences the vessel supervisor and the dock supervisor should exchange information and agree on a transfer plan which should be documented in writing. Information exchanged and the plan must include, as a minimum, the items shown in Appendix 3.

5.5 ENVIRONMENTAL LIMITS

- Wind Limits - Cargo Transfer Operation
- Transfer operations must be suspended and the cargo hoses disconnected when wind forces increase to 30 knots.

6

EMERGENCY RESPONSE TO FIRES, SPILLS, LEAKS ETC

6 EMERGENCY RESPONSE TO FIRES, SPILLS, LEAKS, ETC

6.1 FIRES

- The terminal does not fight fires on barges in the berths! The barge supervisor and tug Master are to take appropriate response action including securing capable external support, notifying the proper authorities and emergency removal of the barge from the dock (Refer ISGOTT section 26.5)

6.1.1 Actions in the Event of Fire at Terminal

- The terminal will raise the alarm to vessels at the berths via the portable radio communication system;
 - the transfer operation is to be stopped immediately.
 - the terminal will respond to the fire.
 - both the terminal and the vessel will take action to mitigate the spread of the fire to the vessel.
- *Terminal will* - secure shore cargo system:
 - disconnect hoses.
 - stand by to cast off the moorings.
 - communicate with authorities.
- *Vessel will* - secure ship cargo system:
 - ready ship for emergency departure.
 - communicate with authorities.
 - depart berth as required.

6.1.2 Action in Event of Fire on Board a Vessel

- The vessel will raise the alarm to the terminal, via the portable radio communication system and give five or more prolonged blasts on the ships whistle, repeated at intervals;
 - the transfer operation is to be stopped immediately.
 - the ship will respond to the fire.
 - both the terminal and the vessel will take action to mitigate the spread of the fire to the terminal.

- *Terminal will* - secure shore cargo system:
 - stand by to cast off the moorings.

- *Vessel will* - secure ship cargo system.
 - disconnect hose.
 - ready ship for emergency departure.
 - communicate with authorities.
 - depart berth as required.

6.2 SPILLS OR LEAKS

6.2.1 Terminal Spills or Leaks

- In the event of a spill from the terminal or a leak from the cargo hose or shore cargo piping:
 - the transfer operation is to be stopped immediately.
 - the terminal's spill response plan is to be implemented as appropriate. This will include informing the proper authorities and initiating containment, recovery and clean up procedures.
 - the cause of the spill must be determined and rectified.

6.2.2 Barge Spill or Leaks

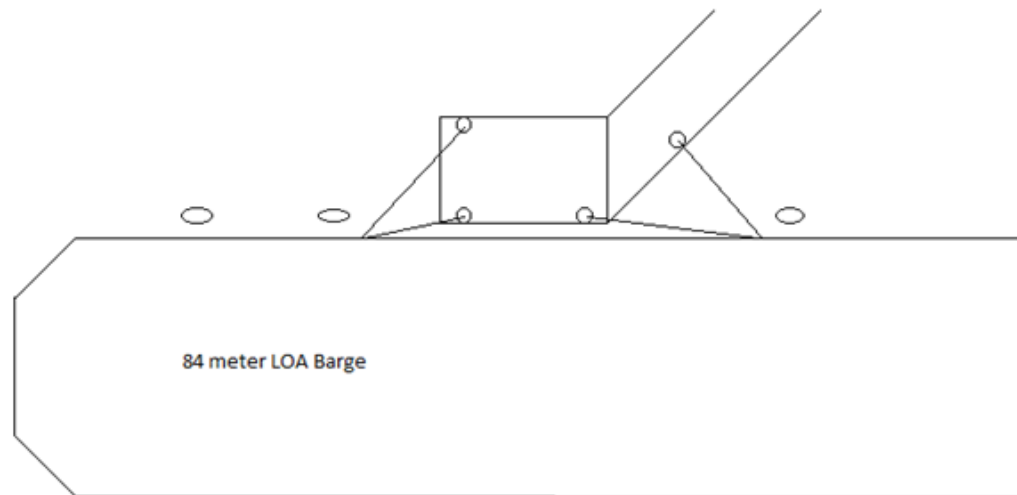
- In the event of a spill or leak from the barge or cargo hose:
 - the transfer operation is to be stopped immediately.
 - the barge spill response plan is to be implemented as appropriate. This will include informing the proper authorities and initiating containment, recovery, and clean up procedures.
 - the cause of the spill must be determined and rectified.

6.3 RESTARTING CARGO TRANSFER OPERATIONS AFTER A MARINE POLLUTION INCIDENT

- Cargo transfer operations may only resume once the cause of the spill has been determined and remedied and after it has been clearly determined that restarting transfer operations will not interfere with the immediate, effective and sustained response to the marine pollution incident.

7 APPENDIX 1A – MOORING GUIDELINE NANAIMO

Suncor Energy Nanaimo Terminal	MOORING GUIDELINES Minimum Mooring Requirements For Barges with LOA up to 84 meters
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- Wind Limits
- Stop cargo transfer - 30 knots
 - Disconnect hoses - 30 knots
 - Take Precautionary action - 30 knots

Location	Breast	Fore Spring	Back Spring	Breast
# of Lines	1	1	1	1

8 APPENDIX 2 - SHIP SHORE SAFETY CHECKLIST (ISGOTT 26.3.3)

Ship's Name

Berth Port

Date of Arrival Time of Arrival

PART 'A' – BULK LIQUID GENERAL - PHYSICAL CHECKS

Bulk Liquid - General	Ship	Terminal	Code	Remarks
1. There is safe access between the ship and shore.			R	
2. The ship is securely moored.			R	
3. The agreed ship/shore communication system is operative.			A R	System Back up system
4. Emergency towing-off pennants are correctly rigged and positioned.			R	
5. The ship's fire hoses and fire-fighting equipment is positioned and ready for immediate use.			R	
6. The terminal's fire-fighting equipment is positioned and ready for immediate use.			R	
7. The ship's cargo and bunker hoses, pipelines and manifolds are in good condition, properly rigged and appropriate for the service intended.				
8. The terminal's cargo and bunker hoses/arms are in good condition, properly rigged and appropriate for the service intended.				
9. The cargo transfer system is sufficiently isolated and drained to allow safe removal of blank flanges prior to connection.				
10. Scuppers and 'save alls' on board are effectively plugged and drip trays are in position and empty.			R	
11. Temporarily removed scupper plugs will be constantly monitored.			R	
12. Shore spill containment and sumps are correctly managed.			R	
13. The ship's unused cargo and bunker connections are properly secured with blank flanges fully bolted.				
14. The terminal's unused cargo and bunker connections are properly secured with blank flanges fully bolted.				
15. All cargo, ballast and bunker tank lids are closed.				
16. Sea and overboard discharge valves, when not in use, are closed and visibly secured.				

17. All external doors, ports and windows in the accommodation, stores and machinery spaces are closed. Engine room vents may be open.			R	
18. The ship's emergency fire control plans are located externally.				Location

If the ship is fitted, or required to be fitted, with an Inert Gas System (IGS) the following points should be physically checked:

Inert Gas System	Ship	Terminal	Code	Remarks
19. Fixed IGS pressure and oxygen content recorders are working.			R	
20. All cargo tank atmospheres are at positive pressure with oxygen content of 8% or less by volume.			P R	

PART 'B' – BULK LIQUID GENERAL – VERBAL VERIFICATION

Bulk Liquid - General	Ship	Terminal	Code	Remarks
21. The ship is ready to move under its own power.			P R	
22. There is an effective deck watch in attendance on board and adequate supervision of operations on the ship and in the terminal.			R	
23. There are sufficient personnel on board and ashore to deal with an emergency.			R	
24. The procedures for cargo, bunker and ballast handling have been agreed.			A R	
25. The emergency signal and shutdown procedure to be used by the ship and shore have been explained and understood.			A	
26. Material safety data sheets (MSDS) for the cargo transfer have been exchanged where requested.			P R	
27. The hazards associated with toxic substances in the cargo being handled have been identified and understood.				H ₂ S Content Benzene Content
28. An International Shore Fire Connection has been provided.				

29. The agreed tank venting system will be used.			A R	Method
Bulk Liquid - General	Ship	Terminal	Code	Remarks
30. The requirements for closed operations have been agreed.			R	
31. The operation of the P/V system has been verified.				
32. Where a vapour return line is connected, operating parameters have been agreed.			A R	
33. Independent high level alarms, if fitted, are operational and have been tested.			A R	
34. Adequate electrical insulating means are in place in the ship/shore connection.			A R	
35. Shore lines are fitted with a non-return valve or procedures to avoid 'back filling' have been discussed.			P R	
36. Smoking rooms have been identified and smoking requirements are being observed.			A R	Nominated smoking rooms:
37. Naked light regulations are being observed.			A R	
38. Ship/shore telephones, mobile phones and pager requirements are being observed.			A R	
39. Hand torches (flashlights) are of an approved type.				
40. Fixed VHF/UHF transceivers and AIS equipment are on the correct power mode or switched off.				
41. Portable VHF/UHF transceivers are of an approved type.				
42. The ship's main radio transmitter aerials are earthed and radars are switched off.				
43. Electric cables to portable electrical equipment within the hazardous area are disconnected from power.				
44. Window type air conditioning units are disconnected.				

45. Positive pressure is being maintained inside the accommodation.				
46. Measures have been taken to ensure sufficient mechanical ventilation in the pump room.			R	
47. There is provision for an emergency escape.				
48. The maximum wind and swell criteria for operations has been agreed.			A	Stop cargo at: Disconnect at: Unberth at:
Bulk Liquid - General	Ship	Terminal	Code	Remarks
49. Security protocols have been agreed between the Ship Security Officer and the Port Facility Security Officer, if appropriate.			A	
50. Where appropriate, procedures have been agreed for receiving nitrogen supplied from shore, either for inerting or purging ship's tanks, or for line clearing into the ship.			A P	

If the ship is fitted, or required to be fitted, with an Inert Gas System (IGS) the following statements should be addressed.

Inert Gas System	Ship	Terminal	Code	Remarks
51. The IGS is fully operational and in good working order.			P	
52. Deck seals, or equivalent, are in good working order.			R	
53. Liquid levels in pressure /vacuum breakers are correct.			R	
54. The fixed and portable oxygen analysers have been calibrated and are working properly.			R	
55. All the individual tank IGS valves (if fitted) are correctly set and locked.			R	
56. All personnel in charge of cargo operations are aware that in the case of failure of the Inert Gas Plant, discharge operations should cease, and the terminal be advised.				

If the ship is fitted with a crude oil washing (COW) system, and intends to COW, the following statements should be addressed.

Crude Oil Washing	Ship	Terminal	Code	Remarks
57. The Pre-Arrival COW checklist, as contained in the approved COW manual, has been satisfactorily completed.				
58. The COW check lists for use before, during and after COW, as contained in the approved COW manual, are available and being used.			R	

If the ship is planning to tank clean alongside, the following statements should be addressed.

Tank Cleaning	Ship	Terminal	Code	Remarks
59. Tank cleaning operations are planned during the ship's stay alongside the shore installation.	Yes/No*	Yes/No*		
60. If 'yes' the procedures and approvals for tank cleaning have been agreed.				
61. Permission has been granted for gas freeing operations.	Yes/No*	Yes/No*		

* Delete Yes or No as appropriate

PART 'C' – BULK LIQUID CHEMICALS - VERBAL VERIFICATION

Bulk Liquid Chemicals	Ship	Terminal	Code	Remarks
1. Material Safety Data Sheets are available giving the necessary data for the safe handling of the cargo.				
2. A manufacturer's inhibition certificate, where applicable, has been provided.			P	
3. Counter measures against accidental personal contact with the cargo have been agreed.				
4. Sufficient protective clothing and equipment (including self-contained breathing apparatus) is ready for immediate use and is suitable for the product being handled.				
5. The cargo handling rate is compatible with the automatic shut down system, if in use.			A	
6. Cargo system gauges and alarms are correctly set and in good order.				

7. Portable vapour detection instruments are readily available for the products being handled.				
8. Information on fire-fighting media and procedures has been exchanged.				
9. Transfer hoses are of suitable material, resistant to the action of the products being handled.				
10. Cargo handling is being performed with the permanent installed pipeline system.			P	
11. Where appropriate, procedures have been agreed for receiving nitrogen supplied from shore, either for inerting or purging ship's tanks, or for line clearing into the ship.			A P	

PART 'D' – BULK LIQUEFIED GASES - VERBAL VERIFICATION

Bulk Liquefied Gases	Ship	Terminal	Code	Remarks
1. Material Safety Data Sheets are available giving the necessary data for the safe handling of the cargo.				
2. A manufacturer's inhibition certificate, where applicable, has been provided.			P	
3. The water spray system is ready for immediate use.				
4. There is sufficient protective equipment (including self-contained breathing apparatus) and protective clothing ready for immediate use.				
5. Hold and inter-barrier spaces are properly inerted or filled with dry air, as required.				
6. All remote control valves are in working order.				
7. The required cargo pumps and compressors are in good order, and the maximum working pressures have been agreed between ship and shore.			A	
8. Re-liquefaction or boil off control equipment is in good order.				
9. The gas detection equipment has been properly set for the cargo, is calibrated and is in good order.				
10. Cargo system gauges and alarms are correctly set and in good order.				
11. Emergency shutdown systems have been tested and are working properly.				
12. Ship and shore have informed each other of the closing rate of ESD valves, automatic valves or similar devices.			A	Ship
				Shore
13. Information has been exchanged between ship and shore on the maximum/minimum temperatures/ pressures of the cargo to be handled.			A	
14. Cargo tanks are protected against inadvertent overfilling at all times while any cargo operations are in progress.				
15. The compressor room is properly ventilated; the electrical motor room is properly pressurised and the alarm system is working.				

DECLARATION

We, the undersigned, have checked the above items in Parts A and B, and where appropriate, Part C or D, in accordance with the instructions and have satisfied ourselves that the entries we have made are correct to the best of our knowledge.

We have also made arrangements to carry out repetitive checks as necessary and agreed that those items coded 'R' in the Check List should be re-checked at intervals not exceeding hours.

If to our knowledge the status of any item changes, we will immediately inform the other party.

For Ship	For Shore
Name.....	Name.....
Rank.....	Position.....
Signature.....	Signature.....
Date.....	Date.....

Record of repetitive checks:

Date:							
Time:							
Initials for Ship:							
Initials for Shore:							

9 APPENDIX 3 - CARGO BALLAST TRANSFER PLANNING

Information Exchange:

- Volume and grade of cargo/ballast to be transferred.
- Cargo location on vessel.
- Maximum acceptable pressure and flow rates.
- Preferred/mandatory transfer sequence.
- Communication process.
- Terminal rules and procedures.
- Notification required to slow down and stop flow.
- Emergency stops.
- Weather outlook.

Documented Operational Plan:

- Volume and grade of cargo and ballast to be transferred.
- Agreed sequence of multi-grade cargo transfers.
- Communication signals for: standby to transfer; start transfer; slow down transfer; stand by to stop transfer; stop transfer; emergency stop of transfer; emergency shutdown of transfer.
- The maximum pressure at: the vessels manifold; the terminal manifold.
- The start-up flow rate, the maximum transfer flow rate, the tank topping (slowdown) rate.
- The notification time for slowing and stopping transfer.
- The emergency shutdown procedure and time required to implement.
- Cargo temperature limits.
- System of venting.
- Times of staff's duty change on vessel and in terminal.