MOORING, CONNECTION AND DISCONNECTION OF HOSE, AND UNMOORING PROCEDURES

1. Object
This document details the general outline in order to carry out in a safe and efficient way the following maneuvers with the Oil Tanker: mooring, connection and disconnection of hose, and unmooring.

The procedure is based on reliable and recent information, and its enforcement is aimed at avoiding accidents, therefore, preventing physical injuries on people, damage to the environment and/or to property of third parties and/or company equipment or its contractors. These instructions represent, also, a guide to the better operational profit of the maritime facilities of the Company at the time of maneuvers dealing with mooring and connection of hoses to the Ships.

2. Scope
This procedure is of compulsory application in all the mooring maneuvers, connection and disconnection of hoses and unmooring, carried out at the Terminals of Caleta Córdova and Caleta Olivia.

Nevertheless, it is important to point out that the Mooring & Loading Master (M&L Master) is entitled to introduce changes in the procedures, and/or solve unexpected situations, whenever needs arise during maneuvers.

3. Responsibilities
3.1 General Manager: To approve the procedures, to provide the resources for its establishment and maintenance.

3.2 Maritime Operations Supervisor (Marine Superintendent): To make the present procedure known to the Contracting Companies of the area (Mooring and Maintenance Service and Mooring Master Service) and to instruct them about it. To file written reports generated by the accomplishment of the tasks detailed in this document.

3.3 Contractors: (Mooring Service and Mooring Master Service): To carry out the operations in agreement with the rules established in this procedure. To generate the corresponding information and reports and to inform about any inconvenience for their fulfillment or to give suggestions in order to improve them.

4. Safety and Care of the Environment during maneuvers:
The risks of maneuvers made by Tankers, Mooring Launches and Support Tugs at a Maritime Terminal are very high. The facilities, as well as the equipment, and this or any
other procedures, will not be enough to carry out a safe operation if the personnel involved do not understand the importance that their action has when carrying out activities.  

For this reason, these procedures contemplates the following actions that will be carried out in all operations with the finality of reinforcing and / or motivating a pro-active attitude in all those involved in safety.

- 5 Minute Safety Chat - M&L Master. The M&L Master shall maintain a safety inductive chat, with the personnel involved in the mooring maneuvers. This chat includes a general review of the risks and cares of the mooring maneuver, likewise a overview of the safety role of each one of the sailors in their permanent guard in the bow and manifold stations during all the operation of the Tanker in the SPM.

- 5 Minute Safety Chat. Mooring Launch or Support Tug Master. They shall carry out a safety inductive chat with the personnel involved in the maneuvers under his responsibility. The chat covers a review of the potential risks and cares of the personnel on the Tug main deck during the mooring and tow maneuvers. The chat shall be duly documented.

In the same manner, in all operations, the following verifications on the safety related equipment shall take place:

- List of verifications of the Equipment and Buoy at Terminal  
  The M&L Master shall carry out the visual safety verification of the Terminal Equipment appearing in the list specially made for this purpose. When operations are finished a similar verification will be made. The verifications will be duly documented.

- List of verifications for Security and Prevention of Pollution, according to maritime Ordinance 1/93.  
  The M&L Master, together with the Master of the Tanker, shall carry out the verifications of safety established at OM1/93 in the Tanker - Terminal System. The verifications will be duly documented.

- List of verifications of the lifting equipment of the Lifting Vessel.  
  The Personnel of the Mooring Service will carry out the visual safety verification of the Tanker lifting system (boom or crane) used to disconnect the hose Terminal. This verification will be presented to the M&L Master for his knowledge, evaluation and decision to continue with the connection maneuver. The verification will be duly documented.

- Telemetry System of the buoy.  
  The Telemetry system yields, in a constant manner, the value of the tension at the mooring rope (mooring strength), residual resistance of the mooring line, excursion and intensity and wind direction, main variables to keep into account by the M&L Master during maneuvers. The information is recorded for its complete analysis once the operations are over. The lack
of such information does not prevent the fact that the operations be carried out, which shall occur without theses references or help.

With the purpose of controlling any chance of environmental impact during the execution of the maneuvers, they shall be carried out in agreement with the provisions made in the POPM 01, Mooring Proceeding of the Environmental Management system of the Company.

5. Development
5.1 Generalities

5.1 Coordination and Supervision of Maneuvers - Mooring, Loading Master and Assistants of the Mooring Service

Maneuvers will be coordinated and supervised by the M&L Master, for which he will make radio contact with the Oil Tanker in advance, and will agree with the Ship Officers, the exchange of the corresponding information detailed in the Port Rules and presented in this document.

The M&L Master will board the Vessel with three (3) assistants (sailors of the Mooring Service), in order to collaborate with the Mooring / Unmooring, the connection/disconnection of the hose, and shifts of Guarding Duty, in the bow and manifold areas.

The responsibility of both sailors on duty consists to do permanent guard, one in the Tanker bow station (watchkeeping the relative position Buoy – Tanker and the strength of the mooring hawser) and the other one in Tanker manifold station (observing the performance of the tanker rail hose connection), as thus also any sign of oil pollution of waters in the proximities of the buoy, hoses and tanker.

Occasionally the sailor who covers the guard position in the manifold station will be authorized by the M&L Master to check the condition of the tow lines deployed from the tanker stern to the Tugboat, when it is operating.

5.2 Forecast

The Terminal has a hired service of local forecast, which is broadcast twice a day approximately at 0600 hours and 1700 hours, and which presents the evolution and intensity of the wind, the wave height and the atmospheric pressure for the day, every two hours. It shows data for the two following days in parameters every three hours.

5.3 Geography and Meteorology

5.3.1 Caleta Córdova

Punta Novales and its long hard clay core shore, which extends in an East Northeast direction, offer a relative protection to the SPM from wave generated by the winds of sector North, North Northeast, and North East. For winds with a West component, at the cliff coastline that extends from North to South in front of the SPM, the wave generated is not relevant, due to the proximity of it to the coast.

Form the San Jorge Lighthouse, the coastline opens in a South West direction, the winds with a South component, (SSW, S. SSE. and SE), even the intensity of the wind may be from regular to light, and generate an important wave in approximately six hours.
The winds from the quadrant E (ENE, E, ESE), are oceanic winds, associated to permanent low pressure centers and high pressure centers, which generate an important ground swell, that sometimes associated to the local winds, may increase or diminish. According to the characteristics of such wave, it is possible to make the mooring of the Tanker, but not the hose connection due to the movement that it produces, and the consequent dynamic charges.

5.3.2 Caleta Olivia
North of the position of the SPM, the line of the coast opens in a NW direction, and to the South, it opens in a SE direction, and after the Tres Hermanas Hill, in an E direction, until Cabo Blanco, closing the St George Gulf.

The winds of sector NW- NWW- N- NNE and NE of regular intensity to light, generate an important wave in less than six hours.
For the winds from sectors WNW- W- WSW and SW, from which the SPM is protected by its proximity to the coast and its cliff steps, the wave generated is not relevant.
Similar behavior is produced for the winds from sectors SSW, S, SSE and SE.
As well as in Caleta Córdova, the winds from sector E, generate an important swell that may increase or diminish with a local wind change, enabling the mooring, but circumstantially preventing the connection of the hose to the Ship.

5.4 Evaluation
The M&L Master will evaluate the situation and decide if conditions to start a safe mooring are given, utilizing all the available resources and his own personal experience.
During periods in which activities are suspended because of bad weather and in which a Ship remains waiting for them to improve, the Mooring Master will permanently evaluate the mooring conditions, and will keep direct contact (via radio or telephone) with the Command of the Ship, in order to have the best coordination for commencement.
If the mooring operation were to be detained (because the M&L Master so considers, or by demand of the Ship Master or the Pilot or the Mooring Launch Master) due to bad weather or poor safety conditions, the M&L Master is the only person authorized by TERMAP S.A. to give any information about the interruption and the later possibility of carrying on the maneuvers, informing of such circumstance by fax to the administrative site of TERMAP and by radio to the Supervisor on duty of the respective Tank Farm.

5.5 Tanker trimming
The maximum trim accepted by the Terminal in segregated ballast condition (25% of the DWT) is of 3 meters. The Ship must always guarantee a safe evolution, keeping its propeller and rudder 1/3 above the surface of the water as maximum.

5.6 Embarking condition
The Ship must present a “combined Pilot ladder” in agreement with the international rules, and to the satisfaction of the M&L Master, on the leeward side of the Ship.
The M&L Master will embark at least a mile from the SPM to facilitate the lee of the Ship, and also, once on board, the better orientation of it for its final approach to the Buoy.

5.7 Main Engine Condition
The Vessel must guarantee the utilization of light fuel and a minimum of two generators to the Terminal.

5.8 Operating limitations and minimum requirements of the mooring systems and hose connection to Tankers.

5.8.1 Operational Limitations set by the National Coast Guard (Prefectura Naval Argentina - PNA)

‘Particular Safety Rules for Navigation to be applied to SPM Monobuoys, annex Alfa of the SNAV Disposition, NA 9 Number 34/99’

1.1 Minimum visibility for mooring and unmooring:

Minimum Visibility to start mooring: 5 nautical miles.
Minimum Visibility for unmooring: 3 nautical miles.

1.2 Hydro meteorological Conditions for mooring:

Maximum admissible wind speed: 15 m/s from West Sector
Maximum Wave Height: 1,8 m

For winds coming from other sectors or quadrants, the allowed speed will be inferior to the indicated above, so that the associated wave shall not reach the maximum height values pointed out.

1.3 Hydro meteorological Conditions for operations:

Maximum admissible wind speed: 25 m/s from West sector

1.4 Mooring maneuvers hours:

Ships smaller than 70.000 DWT: Shall moor at night when wind speed does not exceed 5 m/s and/or the wave height is not over 0,5 meters.

Ships larger than 70.000 DWT: Shall only moor during the day.

1.5 Maximum Draft Allowed: 18 meters (59’ 02’’)

5.8.2 Design and built Limitations

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<th>SPM Caleta Córdova</th>
<th>SPM Caleta Olivia</th>
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<tbody>
<tr>
<td>Maximum Deadweight</td>
<td>160.000 DWT</td>
<td>160.000 DWT</td>
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<tr>
<td>Minimum Deadweight</td>
<td>39.000 DWT</td>
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Expected Environmental Conditions

--Depth

37,14 m. (121,8’’) 42,34 m. (138,9’’)

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--Tide Range 5,98 m. (19,6’)  5,98 m. (19,6”)
--Wind Speed 5,72 m/s (50 knots)   25,72 m/s (50 knots)
--Speed of Current 0,55 m/s (1,07 knots)  0,55 m/s (1,07 knots)
--Maximum Wave Height 6,30 m. (20,6’)  5,00 m. 16,4’)

5.8.3 Mooring system and Hose Layout Limitations

Both SPMs

MAXIMUM DEADWEIGHT ALLOWED  18,0 m. (59’)
MAXIMUM DISTANCE BOW – MANIFOLD  148,5 m. (487,2’)
MINIMUM DISTANCE BOW – MANIFOLD  92,0 m. (301,8’)

MANIFOLD ARANGEMENT  OCIMF

76 mm CHAIN STOPPER ACCORDING OCIMF  1 x SWL 200 Tons

FLOATING HOSE CONNECTION TO VSEL
-- Caleta Olivia SPM  By the Port or Starbord side
-- Caleta Cordova SPM  By the Starboard Side

It depends on the buoy installed at the Terminal and the maintenance jobs planned for 2009. Oil Tankers should have mooring systems and manifold arrangements according to the requirements of OCIMF (Oil Companies International Maritime Forum) included in Recommendations for equipment employed in the mooring of Ships at Single Point Moorings”, third edition, 1993, and “Mooring equipment guidelines”, second edition1997.

The following features may be highlighted in the above publications:

Deck equipment:
- Distance between stopper - forward fairlead: 2.7 to 3.7 m.
- Stopper characteristics: SWL 200 tons, to secure 76mm chain. Throat section: 322 - 330mm x 356 - 360mm.
- Since only a single chain is used for mooring, it is deemed advisable to use a stopper and a central fairlead.
- A Smit Bracket may not be used.
- For the exceptional mooring of Vessels with 54mm stoppers, advance notice will be required, as well as agreement to pay for the mooring chain change service according to TERMAP S.A. scale of charges for services provided to Vessels.

Manifold equipment:
- Horizontal distance between manifold flange-side of Ship:  4.6 m
- Maximum height of flange center on main deck:  2.1 m
- Minimum distance between manifold flange centers:  2.0 m
- Distance between connection flange center to drip trays:  0.9 m (#)
(#) Due to the use of a 16" double carcass connection hose (1.4 m outside diameter), Vessels failing to comply with this last requirement shall not be connected.

**5.8.4 Limitations by operational safety reasons**
The mooring service given by the Terminal includes a Mooring Mooring Launch and a Support Tug, or two mooring Mooring Launches.

Existing availability of Tug, the operations of mooring are realized by its support to assure that the mooring hawser should be in tension and the bow of the Tanker should remain clear from the Buoy during the whole operation. In case the Terminal does not count with a Tug, this job will be made using the propeller of the Tanker.

The Buoys have a control system of the operational parameters, which is radio-linked with the Tank Farm and the support Tugboat. This telemetry system has automatic warning signals in which reference values have been set for the Mooring and Loading Master. Operations will be suspended and Vessel unmooring will take place when the mooring hawser tension (because the meteorological and sea conditions) exceeds 80 tons. in repeated readings, the tension tendency is in crescent and the immediate weather forecast is unfavorable. When the system is not operative, or a spare Buoy without telemetry system (replacement) is in use, the unmooring will be realized the wind surpass the limit established by the PNA.

It is required that all Vessels have an inert gas system for treating their tank atmosphere. Mooring Masters shall only authorize mooring of Vessels having tank atmospheres with 8% or less O₂ content by volume.

**5.9 Mooring procedures**
There are two different ways to moor at TERMAP’s facilities depending on weather conditions and Vessel characteristics, as M&L Master choice:

- Direct mooring (according to OCIMF recommendations)
- Two steps mooring (TERMAP’s old maneuver)

**5.9.1 Direct mooring (according to OCIMF recommendations)**
Generally used with regular to slight winds and wave up to 1.8 meters of height. With this system the mooring is prevented to embark to the Buoy. In the night operations it is the most used system.

The chafe chain is pulled by the pick up rope as soon the Tanker reaches the mooring position.

**5.9.1.2 Necessary hardware prior to arrival:**
- One minimum 90 meters length floating messenger line (as special M&L Master request this messenger line could be changed for a 150 meters length floating mooring line not less than 70 tonnes breaking load).
- One 15 tonnes lifting power winch with an empty storage drum to stow not less than 100 meters length of 80 mm diameter (10” circumference) pick up rope and the connected messenger line.
- Fairlead, bow stopper, roller pedestals and winch drums rightly aligned to avoid unsafe conditions and any pick up rope damage.
- Two Tug lines at the stern, from 80 to 100 meters of length, each one of not less than 70 tons of load of break.

5.9.1.3 Stages:
5.9.1.3.1 Tanker approach (Caleta Cordova -CC and/or Caleta Olivia -C.O.)

In general the Tanker will be aligned with the weather or sea component or effect of major intensity, advancing towards the Buoy with this one in bow or lightly for starboard (C.C.) or portside (C.O.).

For Tanker smaller than 80.000 DWT with effect of wind and/or swell from E, the approach must do between the Buoy and shore; in CC it is advisable to enter from N on the mark of to the "Pilon" (old oil offshore cargo system). When the Ship cross the Buoy line, approximately to 1.5 miles, it will begin to turn down to portside to the above mentioned effects and keeping the Buoy in bow lightly to starboard.

From S in CC and CO the water surface is more limited that for N and the above mentioned route is normally used by winds and wave coming from sector ENE and NE.

For Tankers bigger than of 80.000 DWT with swell from E and without wind, the maneuver between the Buoy and the shore is more difficult.

The right Tanker speed of approaching to the SPM is according to the distance Tanker-Buoy, and at maximum to 50 meters of the Buoy the Tanker must be stopped or started slightly astern moving.

During the approach, the Support Tug will take apart the floating hose and will present the mooring system in the direction of bow of the Ship. The Mooring Launch will take the pick-up rope, keeping it clear and extended to the Tanker.

In the Tankers bigger than 80.000 DWT the Terminal could provide a differential GPS that gives the Tanker speed and the distance to the SPM. This system is also used in all Tankers for night moorings.

Usually a “special pick up rope” provided by TERMAP is used in this maneuver (10" circumference, SWL: 300 tons), designed to circumstantially keep the Tanker position during the maneuver. Nevertheless, it will have to take all the cares to avoid this contingency and to prevent whenever this rope is not installed and the maneuver is carried out with the normal pick up rope (according OCIMF, 10" circumference, SWL: 70 tons).

5.9.1.3.2 First rope

When the Tanker is approximately to 150 meters of the Buoy it will be asked the Mooring Mooring Launch to come closer to take the Tanker mensager line. Once the received it will connect to the pick-up rope of the SPM.

Another method consists of requiring the Mooring Launch approach when the Tanker is approximately to 250 meters of the Buoy, taking the mensager line and navigating at Tanker side towards the pick-up rope. Generally this method is in use with slight winds to soft and few tide current. Secured the SPM pick up rope, it will be heaved until the Tanker is approximately to 50 meters of the Buoy.
The Mooring Launch will embark an additional crewmen in the Tanker to attend the M&L Master at the stern station for the towing line deployment. Then the Mooring Launch will take the end of the floating hose kept for the Support Tug.

5.9.1.3.3 Mooring and/or taking the Tug lines astern
According to the external effects the tows will be taken before mooring to the SPM or not. If the tows take first, the Ship will have to stop the pick-up rope heaved at 80 and 100 meters distance of the SPM. With the Officer and the Tanker crew, two towlines of 80 meters will be passed to the Tug by astern chock of the centerline.
During this operation, the Mooring Service Boatswain at bow station will inform the M&L Master the distance and direction of the Buoy.
As soon as the towlines were passed, the pick up rope will be heaved. When the Ship is to 50 meters of the SPM, the chafe chain will begin to pass trough the Bow-Stopper and it will be secured on vertical link with the tongue or bar lock.
Finished the mooring the Boatswain, or the sailor at the bow station, will inform the M&L Master and the Support Tug Master the mooring hawser condition. The maneuver will be given as finished once the towlines and the mooring hawser are tight.

5.9.2 Two steps mooring (TERMAP’s old maneuver)
This system is used generally with regular to slight winds from W and not relevant waves; and in those Tankers that cannot use the special pick up rope detailed in the previous section.
The chafe chain is pulled by the pick up rope later than the Tanker mooring position is kept with two Tanker mooring lines secured to the Buoy mooring bits. These lines are released as soon the chafe chain is secured in the bow stopper.

5.9.2.1 Necessary hardware prior to arrival:
- Two minimum 200 meters length floating mooring lines not less than 70 tonnes breaking load (80 mm diameter or 10” circumference)
- One minimum 90 meters length floating messenger line (as special Mooring Master request this messenger line could be changed for a 150 meters length floating mooring line not less than 70 tonnes breaking load).
- Two 15 tonnes lifting power winch each one with an empty storage drum to stow not less than 150 meters length of 80 mm diameter Tanker mooring lines.
- Fairleads, bow stopper, roller pedestals and winch drums or capstans rightly aligned to avoid unsafe conditions and any pick up rope damage.
- Two Tug lines at the stern, from 80 to 100 meters of length, each one of not less than 70 tons of load of break.

5.9.2.2 Stages
5.9.2.2.1 Tanker approach (C.C. and/or C.O.)
There will take the same considerations as in section 5.9.1.3.1 (Direct mooring) for bigger and smaller Tankers than 80,000 DWT.
The Mooring Launch will be positioned approximately to 180 meters of the SPM waiting of being called to take the Tanker mooring lines.

5.9.2.2.2 First rope
The Mooring Launch will take the mooring lines when the Tanker is close to the Buoy. The Mooring Launch will navigate to the Buoy pulling the Tanker mooring lines in slack condition; embark its crew to pass the lines to the Buoy’s bits. The Mooring Launch Master will inform the Boatswain to start the mooring liners heaving.

5.9.2.2.3 Tanker position
Heaving both mooring lines in force, and preventing the Vessel from taking "sudden moving ahead", it will take it to 50 meters of the Buoy, breaking the mooring lines winches or securing them in bits. Simultaneously, the Mooring Launch will have taken and will have ready the pick up rope of the SPM to connect to a Tanker mensager line. There will take the same considerations as in section 5.9.1.3.1 (Direct mooring) with regard to take first the towing lines or the mooring hawser.

5.9.2.2.4 Mooring
The pick up rope will be heaved until the chafe chain passes trough the Bow-Stopper where will be secured on vertical link with the tongue or bar lock. Releasing de mooring lines the SPM hawser will take the mooring tension and the maneuver will be considered finished.

5.9.3 Mooring Operations with or without Tugboat. Taken cares with transferring the force to the mooring hawser, keeping the stable condition of the line “Buoy - Tanker - Tugboat”, and handling of the floating hoses line.

Special care will be taken when finalized the mooring maneuver, and the activities of the Tugboat in the floating hose line, it takes tow by the stern from the Tanker. In such circumstance the Tugboat will transfer its tow force in a gradual way in order to avoid the Tanker takes excessive speed and the mooring hawser is suddenly overloaded, producing loss of strength resistance or breakage of the mooring hawser.

Additionally, during the permanence of the Tanker in the Terminal the Tugboat will act permanently to maintain the safe condition of the system Buoy - Tanker – Tugboat to avoid the strength loss of the mooring hawser and/or the risky bow Tanker approach to the Buoy. To this, it will count on information provided by the M&L Master, the sailor who carries out permanent guard in the bow and the displayed one in a portable computer of the telemetry system placed in the bridge of the Tugboat. This equipment show the condition of the mooring hawser load, that is required be permanently with strength, preferably up to 5 tons. Loads between 5 and 40 tons are acceptable for a safe operation. During the Tugboat maneuvers necessary to hold the position Buoy - Tanker – Tugboat, it will also have care of gradual transference of the tow force to avoid the overload the mooring hawser of the buoy.

For the case in which the Terminal occasionally has not the Tug, the floating hoses will be towed by the second mooring Mooring Mooring Launch, and only in case of need the Buoy - Tanker position will be kept with the Ship’s engines as mentioned in the document “Single Point Mooring Maintenance and Operations Guide / OCIMF”. Also in this case particular care will be taken when finalized the mooring maneuver and the Tanker transfer its mooring force to the hawser. It has to be in a gradual way in order to avoid the suddenly overload mooring system of the Buoy. The L&M Master and the Captain of the Tanker will interchange the necessary information so that the mooring effort
is transferred in a gradual way, being used the propeller of the Tanker to reduce speed backwards.

5.10 Procedure for Hose connection
Finished the mooring, the Mooring Launch will proceed to tow the end of the floating hose to the Vessel manifold zone where are the connection flanges and the equipment for hose hoisting (boom or crane).

The hook boom or crane will be dropped to the position in which the personnel of the Mooring Launch can secure the hose sling to it. Then the will be lifted hose taking the precaution that the Mooring Launch and the personnel have moved back from the vertical line (for the case of strong swell or excessive hook size the mooring crew has an “auxiliary hook” to make the maneuver possible).

The hose will be hoisted to a position where the hose chain can be secured in a bit through a release hook. This maneuver will be able to be realized in two steps whenever the height of the boom or crane is not sufficient to hoist the required distance.

Once the hose chain is secured the hose will be moved down softly until the chain supports his weight and, simultaneously, it begins to bend towards the inner side of the Ship. When the hose is on the manifold spill tank, the mooring crew will proceed to remove the hose blind flange to verify the “O ring” condition and, using “tirfors” and the Tanker boom or crane, make the cam-lock hose connection to the manifold flange.

The maneuver will be finished as soon as there is confirmed than the hose has a good radius bend and the mooring crew installed the auxiliary ropes for hold the hose against the Tanker rail.

Finally, it will also take special care with the handling of the line of the floating hoses by the Tugboat and/or Mooring Boat in occasion to ride it away from the course from of the Tanker. The excessive towing force could cause the damage of the first of buoy hose or the break of the breakaway coupling, for such reason is recommended to always maneuver the floating line keeping a “J” or “U” configuration, minimizing the sudden transference of tow efforts to the hoses line.

5.11 Procedure of Hose disconnection
As soon as the Shipment was finished, and being the valves of the manifold and hose closed, the M&L Master will indicate to disconnect the hose. For that, the cam-lock will be carefully released and the hose moved using the boom or crane over the oil tank to a position in which can install the blind flange.

The holding ropes will be released from the rail and the hose will be hoisted until the boom or crane takes the hose weigh, then the hose chain will be released. Later, under good weather, the hose will be descended softly until it floats freely in the sea, where the Mooring Launch crew can disengage the hose-lifting sling from de hook.
In conditions of good weather this maneuver will be able to be realized without the assistance of the Mooring Launch using the “auxiliary hook”, or a maneuver in which hose is descended to the sea using a rope passed through the Master link of chain hose. In this last option, the rope will be handled from a Tanker bit and retained until the Mooring Mooring Launch assistance or, in case the Mooring Launch is not available, retained up to the Tanker unmooring, releasing one end of the rope in order it runs through the Master link.

5.12 Procedure of unmooring
As soon as the hose was disconnected, already taken the decision of the way to release it (depending on the presence or not of the Mooring Launch in the zone - see item s 5.8 and 5.11), and according to the characteristics of Tanker mooring equipment to heave and stow the pick up rope, it will be prepared unmooring maneuver.

In those Ships in which the pick up rope deployment is difficult and/or slow, it will prepare on the deck in order it can spread out as soon as the chain was released from the bow stopper.

In the Ships in which the pick up rope has been stowed correctly, as soon as the chain is released, the rope will spread out slowly moved for the weight of the chain, and later for its own weight and the Tanker moving astern.

In general terms, the Tanker bow stopper is opened and the chain released as soon as the hawser tension is discharged, by the relative movement between the Tanker and the Buoy, or induced by from the Tanker using its main engine ahead for few seconds, according the M&L Master advice.

The function of the Support Tug during the Taker unmooring will be subordinated to the sea and weather conditions and the relative position Tanker - coast. In such cases, the M&L Master will coordinate with the Tanker and Tug Masters the possibility of turning the Tanker with the Tug before the unmoor, or to tow the Tanker astern after the releasing the chain from the bow stopper.

5.13 Procedures of Hose disconnection and unmooring for emergencies or bad sea or weather conditions.
In case of emergency or for bad weather conditions the unmooring procedure is the detailed in the section 5.9, taking care of the hose release moment in order to prevent any risk in the Tanker departure route.

According to the Marine Committee of Security (CSM) evaluation, "the main considerations to attend by the M&L Master to decide to stop the load and unmoor the Tanker are:

a) That the wind speed does not exceed 25 m/s, according Argentine Coast Guard disposition - PNA (34/99 DPSN)
b) That the alarm levels of mooring hawser strain (Hi and HiHi), both preventive and reduced of the original ones, have been both exceeded at least once, that the tendency line of "Prediction" (Telemetry system) was increasing or 81 tons have been reached
c) That the forecast was unfavorable
d) That the weather and sea conditions, or those predictable could develop present risks for the persons and equipment during the hose disconnection, the unmooring or the Mooring Launch maneuvers.

*These considerations are not restricted and the M&L Master, based on his criterion and professional experience, can decide to finish the operations for other safety reasons*.

For the case in which the Mooring Launch can be present at the maneuver, the hose will be descended using the “auxiliary hook”, which facilitates the hose sling release without the Mooring Mooring Launch crew intervention. Later the Mooring Launch will take the hose from its towing rope to separate it during the Tanker unmooring route.

When it is not possible assist the maneuver with the Mooring Mooring Launch, the hose will be descended to the sea using a rope passed trough the Master link of the chain hose and fastened in Tanker bit.

As soon the chafe chain is released from the bow stopper, simultaneously with Tanker moving astern, the retained hose rope will be handled from a Tanker bit in order it runs through the Master link., taking care the floating hoses do not interfere in the Tanker route departure.

### 5.14 Illustrations
Annex &. Figures 6.1 detail the Mooring maneuver and Figure 6.2 the hose connection maneuver.

### 5.15 Activity records and associate documents
- The following records document the mooring and hose connection activities of every operation; the Marine Superintendent keep them at the head office of TERMAP S.A.
- 5 minutes safety chat
- List of cross-checks of the Buoy equipment (*
- List of cross-checks for safety and the oil spill prevention in load and discharge operations of hydrocarbons (OM 1/93) (*)
- List of cross-checks of the Tanker hoist equipment
- Time log (hourly Relation of facts)
- (*) It indicates the Records that might be related with the TERMAP Quality Management System

Likewise, following documents are associated with this Document:
- Port Regulation
- POPM 01, Procedure of Mooring of
- Instructions - Record: Unmooring 1 - Instructions for an emergency unmooring.