

GUNVOR

Independent Inspection Requirements

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Gunvor Independent Inspection Requirements

Overview:

The following Inspection Requirements are to be adhered to on all assignments performed either solely for Gunvor or when conducting an independent inspection for custody transfers involving multiple companies. These requirements are to be considered the **minimum** steps to be taken when conducting an independent inspection and / or cargo quality determination. Functions of the quantity inspection or cargo testing which are not addressed in this manual are to be performed in accordance with the latest API/ASTM Guidelines.

The inspection company is to review the job nomination in detail at the time of receiving said nomination. They are to consider their ability to perform the inspection in accordance with the nomination details as well as the requirements contained herein. In the event that local practices, either terminal/refinery or governmental bodies prohibit any of these requirements, Gunvor is to be notified prior to the inspection being carried out.

The inspector is to advise details of what functions cannot be performed, why, and what alternate methods will be used. In addition to notifying Gunvor, the inspector is to issue a Letter of Protest to the shore facility outlining their non-compliance with industry standards and reserving the rights of Gunvor.

Throughout the duration of the loading or discharge Gunvor is to receive a minimum of two (2) written updates per day. The updates should be sent via email to the Gunvor Operations Scheduler and should contain the following information:

- Vessel ETA (prior to arrival)
- Updated Time Logs during the custody transfer
- Any problems or potential problems
- Cargo Quantities (OBQ, ROB, Quantity Loaded/Discharged)
- Quantity of Free Water Found
- Estimated Completion Time and Departure Time

If any of the Independent Inspection Requirements contained in this manual are not clearly understood, please contact Gunvor for clarification.

Gunvor Independent Inspection Requirements

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Shore Measurements:

- A “Key Meeting” is to be held with shore terminal personnel prior to the measurement of tanks to be used for the loading/discharge.
- During this meeting determine the method to be used for measurement based on the tank calibration charts (Innage, Ullage or Innage by calculation using an ullage gauge subtracted from the published gauge height. The latter generally applies to Black Oil only).
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- Address the pipeline condition (empty/full) and the method to be used to verify said condition (line displacement, pressure packing, pigging of the line).
- Determine the shore pipeline system capacity which will be used to determine the amount of product for a Line Displacement exercise.
- Determine quantities in the tank(s) prior to loading / discharge per terminal inventory records. Ensure tank(s) contain a sufficient amount of product to meet the required load amounts or in the case of a discharge ensure the tank(s) contain ample headspace to receive the entire quantity of product.
- For discharge operations, the inspector is to determine the liquid level in the designated receiving shore-tank. If the product level is below the highest point of the inbound pipeline, the tank is not to be used for the shoreline verification. An alternate tank should be used for the displacement or if this is not an option the inspector is to Protest the shore facility and reserve Gunvor’s right to base the custody transfers on ship’s figures x VEF.
- Determine estimated pumping time for the movement based on terminal records / historical data.
- Advise Gunvor of estimated pumping time in your email update.

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Tank Gauging:

- Physical/Manual Gauges are to be used for all custody transfers. The inspector is to use his/her own “certified” gauge tape and bob.
- Two (2) consecutive gauges should be taken to ensure the accuracy of the initial gauge.
- Gauges are to be taken and recorded at increments that correspond to the printed Tank Calibration Tables (ie: 1/8 inch, 1/16 inch, 1 millimeter, etc).
- For discharge operations, a physical gauge height measurement must be taken both before and after the custody transfer for each shore-tank used. Results of these gauges should be compared to each other to determine if bottom flexing / tank floor settlement is found. If the difference in the gauge heights exceeds ¼ inch or 5 millimeters, the inspector is to issue a Letter of Protest to the shore facility and notify Gunvor immediately.

Water Detection:

- “Water-Cuts” are to be taken on all products (Crude Oil, Distillates, Gasoline/Naphtha, Residual Fuels) at the time of gauging.
- Two (2) different brands of Water Finding Paste should be used as some brands react differently based on the viscosity of the products measured.
- The greater of the two (2) findings should be used as the official water level in the tank.
- The bob should be submersed for a sufficient amount of time to obtain accurate readings.
- The same submersion time should be used on both the opening and closing gauges for the tank.
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Gunvor Independent Inspection Requirements

Tank Temperatures:

- Physical temperatures are to be taken in all cases by the independent inspector utilizing his/her own calibrated Electronic PET device.

- PET's/Thermoprobes are to be checked for accuracy prior to each assignment via Hot/Cold/Ambient Water Baths checked against a Certified Thermometer. The findings of these checks are to be recorded and maintained by the inspector.

- The number of temperature readings to be taken are as follows:
Unheated Products Upper/Middle/Lower Levels
Heated Products One reading every 2 meters or 6 feet

- Individual level readings are to be recorded and retained. An average of the level readings is to be used for actual tank temperature calculations.

- In the event that tank stratification is found (5 degrees C or 12 degrees F) between upper and lower levels, Gunvor is to be notified and a Letter of Protest is to be issued to the Shore Facility.

Automatic Gauges/Fixed Gauging Systems:

- While "auto gauges and/or temps" are not to be used for the actual custody transfer calculations, they are to be recorded in all cases. These readings can be used to compare to the manual findings in the event of a quantity discrepancy to determine if a bias exists and if manual gauges may be inaccurate.

- The inspector is to maintain the auto readings in the job file. Report these readings to Gunvor should a cargo loss in excess of 0.20% occur.

- The inspector is to document the type of auto gauging equipment used (Float Gauges, Fixed Radar Systems, etc).

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Tank Shell Corrections:

- The ambient air temperature is to be taken and recorded by the inspector at the time of gauging both opening and closing.
- Tank Shell Corrections are to be applied at the time of quantity calculations (where possible).
- The inspector is to document if shore-tanks used are insulated or non-insulated.

Floating Roof Tanks:

- The inspector is to note on his / her report the type of tank construction for each shore-tank used (Fixed Roof, Internal Floating Roof, External Floating Roof).
- A visual check should be made of external floating roofs at the time of gauging to check for Water, Snow or any substance on the roof that may add additional weight to the roof and alter the published displacement of the roof. If any substance is found, the inspector is to issue a Letter of Protest to the shore facility and notify Gunvor of the situation.
- The Critical Zone range is to be recorded and the inspector is to ensure that the leg position (High/Low) corresponds to the published critical zone range.
- Tank calibration data is to be recorded by the inspector stating the date of tank calibration, company who performed the calibration, is tank calibration chart based on innage or ullage gauges and any special notes concerning the calibration table.
- Tank Bottom Tables are to be used for any portion of cargo that is below the actual beginning of consistent volume per inch/centimeter based on Cone Bottoms, Crown Bottoms or Irregular Bottoms.

Gunvor Independent Inspection Requirements

Shore-Tank Quantity Calculations:

- VCF Tables 6A (Crude Oil) or 6B (Products) are to be used for quantity calculations when entry is based on API Gravity. VCF Tables 54A or 54B are to be used with entry of Density.
- When discharging semi-refined products such as VGO, Cat-feed or Straight Run Residual Fuel into shore-tanks containing Crude Oils, If Table 6A or 54A is used for the opening calculations, the same table must be used for the closing calculations. If Tables 6B or 54B are considered more appropriate, the same table must be used for both the open and closing calculations.
- An average of all temperatures taken is to be determined and used for VCF entry.
- Gravities/Densities used for quantity calculations should be based on those results obtained by the independent inspector in their laboratory and not submitted data from the shore facility.
- Free Water Quantities are to be deducted from the cargo volume at the observed temperature before applying the VCF Factor.
- Tank Shell Corrections are to be used where possible.
- Floating Roof Tanks with a cargo level within 6 inches/15 centimeters above or below the Critical Zone are to be considered inaccurate and a Letter of Protest should be issued to the shore facility. The LOP must clearly state that Gunvor reserves the right to base the custody transfer volume of Vessel x VEF Figures due to this situation.
- Tanks with a limited "Heel" of product should be avoided. Use 3 feet or 1 meter as a guideline for the minimum level of cargo in the tank. For volumes below this level, issue a Letter of Protest to the shore facility and notify Gunvor accordingly.
- Tanks containing cargo which is "crusted" or "semi-solidified" should not be used. If this is encountered issue a Letter of Protest to the shore facility and notify Gunvor.

Gunvor Independent Inspection Requirements

Quantity Determination by Meters:

- If “Metering” is used to determine the custody transfer volume the inspector is to record the brand of meters used, date of last “independent” calibration performed and method of calibration used (prover loop, etc).
- Record the opening and closing meter readings for the transfer. If pumping “shut-downs” occur, record the opening and closing readings for each shut-down.
- Determine the Density, Temperature and Meter Factor used for the transfer.
- Document any meter proving that takes place before, during and after the actual custody transfer.
- Copies of all terminal Meter proving and batch reports are to be provided to Gunvor
- If static shore-tank gauging is possible in addition to metered volume, the inspector is to gauge all tanks and compare metered volumes to shore-tank Up Gauged or Down Gauged Volumes. If these volumes differ by more than 0.10% the inspector is to issue a Letter of Protest to the shore facility and notify Gunvor of the findings.

Quantity Determination by Vessel’s Figures:

- In the event that delivery or receiving shore-tanks are active to other sources during the custody transfer and metering is not an option, vessel’s figures times an appropriate VEF are to be used to govern the sale/purchase.
- Said quantities are to be based on total onboard volume before discharge / after loading less any OBQ or ROB times a valid Vessel Experience Factor as determined by the Independent Inspector.
- Please see additional details concerning this option in the “Vessel Quantity Determination” section of this document.

Gunvor Independent Inspection Requirements

Shore-Tank Sampling:

- Following are the “minimum” samples to be taken from delivery or receiving shore-tanks involved in the custody transfer:
- Clean Oil (Distillates, Gasoline): 2 x 1 Quart/Liter from Upper/Middle/Lower/Bottom sections of tank for loadings. One (1) set of level samples is to be used for testing and/or retain and one (1) set to be sealed and placed onboard the vessel.
- For Clean Oil Discharges, 1 x 1 Quart/Liter is to be taken from Upper/Middle/Lower sections of each tank both before and after discharge.
- Black Oil (Residual Fuel, Marine Fuels, VGO, Crude Oil): 2 x 1 Quart/Liter from Top/Upper/Middle/Lower/Bottom sections of tank for loadings. One (1) set of level samples to be used for testing and/or retain and one (1) set to be sealed and placed onboard the vessel.
- For Black Oil Discharges, 1 x 1 Quart/Liter is to be taken from Top/Upper/Middle/Lower/Bottom sections of each tank both before and after discharge.
- All Products: In addition to the above samples, a 1 x 1 Quart/Liter “Running” Sample is to be taken from each shore-tank. This sample is to be used for Gravity/Density Testing. Results of this testing are to be used for Quantity Volume Correction Calculations.
- All Samples are to be taken from “Open Hatches” where possible using a clean sampling cage or zone sampler. Sampling cord must also be in a clean condition prior to use.
- Where closed system sampling must be used the inspector is to utilize his/her own equipment with the appropriate sampling attachments employed.
- All samples are to be retained by the independent inspector for a minimum of 60 days.

Gunvor Independent Inspection Requirements

Shoreline Content Verification:

- A proper line system verification must be conducted for all loadings or discharges.
- A Line Displacement is the preferred method to be used to verify fullness of the system but some facilities may opt for alternate methods such as pressure packing and this is acceptable providing the inspector witness and document this exercise. Gunvor should be notified if an alternate method is used.
- For Line Displacements a quantity of 1.5 times the capacity of the system should be pumped from the vessel to a designated shore-tank before shut-down (discharges). The reverse to be applied to loadings.
- If multiple shore-tanks are involved in the displacement, the shore-tank at the furthest point in the system is to be used to determine the displacement quantities.
- Quantities delivered versus quantities received should be compared and the results should not differ by more than 5%. If results fall outside of this range a second displacement should be performed and results documented.
- Subsequent displacements should be performed until the results of same are within the 5% range.
- The quantity results of all displacements should be recorded and an adjustment to the landed or delivered quantities of the overall custody transfer should be adjusted to reflect the "slack" status of the shore-line system.
- For any "Slack" results obtained, a Letter of Protest should be issued to the shore facility and Gunvor should be advised of the results.

Gunvor Independent Inspection Requirements

Vessel Measurements:

- A “Key Meeting” is to be held with the vessel’s officer(s) prior to performing the on-deck inspection. Said meeting should address the following:
 - Intended load/discharge/stowage plan.
 - Review plan and ensure that designated tanks have sufficient capacity to receive the total quantity of product.
 - Review Cargo Heating Requirements (if applicable) and ensure that vessel has the capabilities to maintain the agreed upon cargo temperature.
 - Address Segregation and/or Blending requirements when handling multiple cargoes.
 - Discuss expected load / discharge pumping rates and anticipated time needed to fully load or discharge the cargo.
 - Address who will call the cargo “Stop” – Vessel or Shore Facility.
 - Outline plans to perform the shoreline displacement exercise. Advise ship of quantity to be pumped and obtain from them the tanks/compartments they plan to use for the displacement.
 - Address vessel’s pumping / piping systems (ie: fixed pump-room with below deck piping, independent deepwell pumps and lines per tank, etc) and current condition of piping (empty/full/etc.).
 - For discharges, obtain copies of all load-port documents including Bill of Lading, Vessel Measurements/Quantities, Shore Measurements/Quantities and Laboratory Testing Results.
 - Exchange Key Contact Information which will be used to communicate during the cargo transfer operation.

Gunvor Independent Inspection Requirements

Vessel Cargo Tank Gauging:

- Inspector is to visually read and record forward, mid-ship and aft drafts and condition of list. The difference of arithmetical draft and the actual mid-ship draft will give the condition of stresses such as hogging and sagging which will play a vital role in the determination of Free Water especially in mid-ship tanks.
- Vessel compartments are to be gauged by the independent inspector using his / her own equipment.
- Open hatch gauging utilizing a manual certified tape and bob is the preferred method of cargo measurement. If the vessel's tanks are under IG pressure a closed system gauging device is acceptable.
- If closed system gauging is required, the inspector is to use his / her own equipment. If ship's equipment must be used (based on non-compatible mounting fixtures) the inspector is to verify the calibration of said equipment by comparing readings to the inspector's equipment.
- The brand and model of closed system tape used should be recorded.
- Two (2) consecutive gauges should be taken of each tank to verify findings.
- Measurements should be taken to the nearest increment that corresponds with the vessels' calibration tables (ie: 1/8", 1/16", Centimeter, 5 millimeters, 1 millimeter, etc).

Water Cuts/Measurements:

- Free Water Soundings should be taken by using two (2) different brands of Water Finding Paste on the measurement bob. This applies to both Open Hatch Gauging and Closed System Gauging.
- ■ When measuring Free Water with a closed system device, the results of the device (Beeping at Water Level) should be recorded as well as the results indicated by the detection paste.
- A sufficient amount of bob submersion time should be allowed for the detection paste to obtain an accurate cut.

Gunvor Independent Inspection Requirements

Cargo Tank Temperatures:

- Cargo temperatures should be taken with the inspector's calibrated PET device if open hatch gauging is possible or a closed system measurement device if tanks are in an "inert" condition.
- If a closed system device is used it must be checked against the inspector's PET for accuracy prior to its use.
- The following number of temperatures per tank should be taken for unheated cargoes: Upper / Middle / Lower portions of the tank.
- The following number of temperatures per tank should be taken for heated cargoes: one (1) reading every 2 meters or 6 feet of product.
- An average temperature per compartment should be calculated based on the results of all levels.
- If temperature stratification is present (5 degrees C or 12 degrees F) between any two (2) levels in the tank, inspector is to document said results in his / her final report.

Auto Gauges/Fixed Gauging Systems/Auto In-line Samplers:

- While manual measurements taken by the independent inspector are to be used for the custody transfer quantities, the inspector is requested to also record the gauges and temperatures obtained by the vessel's fixed gauging system. This information is for comparison purposes only.
- The inspector should also record the brand of the fixed gauging system as well as the functionality of said system.
- In an "In-Line Sampler" is used to determine the custody transfer analysis the inspector is to record the brand of ILS used along with the system data required for calculations. Determine and record the grab factor, performance factor and sensor accuracy used by the system and that it complies to API Guidelines.
- Prior to use the ILS receiving pot is to be verified to be clean and dry and then correctly sealed in place.
- The inspector is to confirm that the correct sample volume is received and that the contents are mixed well prior to testing.
- Copies of all terminal ILS Reports are to be provided to Gunvor.

Gunvor Independent Inspection Procedures

OBQ / ROB Determination:

- **OBQ Before Loading:**
- Determine previous cargo in each compartment at Key Meeting.
- Ensure that previous cargo is either compatible with cargo to be loaded or that tank cleaning operations have been carried out to ready the tanks for the intended cargo.
- If tanks have been cleaned, report cleaning methods used.
- Instruct Ship personnel to open deck valves and drop all lines into cargo tanks before performing OBQ Inspection/measurement.
- Measure each compartment by Innage Gauge using Water Finding Paste as well as Product Gauging Paste.
- If cargo is found, determine if product is Liquid Free Flowing Oil or Non Free Flowing Oil. The use of a "mirror" or similar devise should be used to view the product from deck level.
- If "Free Flowing", apply trim corrections and/or calculate the volume of product by Wedge Formula.
- If "Non Free Flowing", do not adjust volumes for Trim Corrections.
- If the previous cargo was Crude Oil and the intended cargo to load is Residual Fuel, a 1 Foot Sample must be taken from each compartment and tested for "Flash Point". A shut down of loading is not required at this point unless low Flash results are obtained.
- Measure all non-cargo tanks at time of OBQ inspection.
- This to include Ballast Tanks, Slop Tanks, Cofferdams and all other void spaces.
- Calculate the total amount of product onboard before loading.

Gunvor Independent Inspection Requirements

OBQ / ROB Determination:

- **ROB After Discharge:**
- Instruct Ship personnel to drop all lines into the cargo tanks prior to taking measurements.
- Measure each compartment by innage gauge.
- If cargo is found, determine if product is Free Flowing Oil or Non-Free Flowing Product.
- If Free Flowing Oil, apply Trim Corrections and/or Wedge Formula to volume calculations.
- If Non-Free Flowing, do not adjust volumes for trim.
- If product is determined to be Free Flowing, the inspector is to make every effort to obtain a small sample of the ROB material. This sample may be used at a later date to verify the nature of the oil.
- Measure all non-cargo tanks (Slop Tanks, Ballast Tanks, etc.) and any cargo tanks that were not designated to receive cargo.
- If product is found in these tanks the inspector is to quantify the oil and issue a Letter of Protest to the vessel.
- Samples are to be taken and retained of any product found in non-designated tanks.
- If any ROB is found onboard the ship, the inspector is to issue a Letter of Protest to the vessel concerning same.

Gunvor Independent Inspection Requirements

Vessel Cargo Quantity Calculations:

- Volume Correction Calculations must be conducted using Table 6A (Crude Oil) or 6B (Products) with API Gravity entry or Table 54A (Crude Oil) or 54B (Products) with Density entry.
- Volume Correction Calculations should be carried out on a tank by tank basis with volumes at “Standard Temperature” being combined to arrive at a total quantity onboard.
- Trim and List Corrections should be applied where applicable.
- For loadings, the total OBQ amount should be deducted from the final Onboard Quantity After Loading to arrive at the total quantity received.
- For discharges, the total ROB amount should be deducted from the vessel arrival quantity to arrive at the total cargo delivered.
- The inspector is to calculate a valid VEF (Vessel Experience Factor) based on records of previous voyages.
- The total quantity of cargo loaded or discharged should be divided by the VEF to arrive at the adjusted quantity of cargo received or delivered.
- Inspectors **should not** sign any of the vessel's quantity reports that verify the ship's findings. The independent inspector's findings are the binding numbers to be used by all trading partners involved in the custody transfer.
- Inspectors may sign ship's paperwork with a note: “For Receipt Only” which acknowledges that the inspector was given copies of the ship's reports.
- The inspector is to retain copies of all paperwork received from the vessel in the job file.

Gunvor Independent Inspection Requirements

Vessel Cargo Sampling:

- The following number of samples are the “minimum” samples required for each custody transfer inspection. Should additional / special samples be required you will be notified of same in the written Inspection Nomination.
- For Black Oil / Crude Oil cargoes obtain 2 x 1 Quart/Liter per level Upper/Middle/Lower and 1 x 1 Quart/Liter Bottom Sample per vessel compartment.
- For Clean Oil cargoes obtain 2 x 1 Quart/Liter Running Samples and 1 x 1 Quart/Liter U/M/L Samples per compartment.
- Open hatch sampling utilizing a Cage or Zone Sampler is the preferred method to be used. If vessel is inerted and open hatch sampling is not possible, closed system sampling devices should be used. The inspector is to ensure he / she has the necessary attachments (spot level samples, running samples) to take the correct samples.
- For Multi-grade cargoes, the inspector is to record and report the sequence of tank or grade sampling. The “Sweeter” grades are to be sampled first (lower Sulfur, cleaner Color) and the inspector is to advise how the sampling equipment was cleaned between each grade.
- A Sample Report is to be prepared by the inspector depicting a listing of all samples taken during the custody transfer inspection.
- For loadings one (1) set of the U/M/L Samples (Black Oil/Crude Oil) are to be sealed and placed onboard the vessel for delivery to the disport inspector.
- For loadings of Clean Oil, one (1) set of Running Samples are to be sealed and placed onboard the vessel for delivery to the disport inspector.
- A “Sample Receipt” is to be prepared by the inspector and signed by the ship’s personnel to verify the samples that were placed onboard.
- All samples taken by the inspector during the custody transfer should be retained by the inspector for a minimum of 60 Days.

Gunvor Independent Inspection Requirements

Bunker Survey:

- A Bunker Survey or Bunker Check must be performed by the Independent Inspector both before and after the custody transfer when inspecting the following cargoes:
 - Residual Fuel
 - Fuel Oil
 - Marine Fuels
 - Crude Oil
 - VGO
 - Catfeeds
 - Diesel Fuel
 - Gasoil
 - LCO
- All Bunker Fuel Tanks should be gauged and temperatures taken. Determine the GOV Volume in each tank and calculate each to GSV using submitted API Gravities or Densities.
- Compare total GSV Quantities on arrival to total GSV Quantities on departure to obtain the amount of fuel consumed during the custody transfer.
- Obtain from the Chief Engineer the vessel's typical consumption amounts while "In Port", "At Sea", etc.
- Compare actual consumption during the custody transfer to typical In-Port consumption for the period of time used for the transfer. If the quantities differ by more than 10%, issue a Letter of Protest to the Vessel and notify Gunvor of your findings.
- Obtain additional documentation from the vessel as follows: Total Bunker Fuel Quantities when sailing from last port of call and latest bunker fuel receipt.

Gunvor Independent Inspection Requirements

Time Log / Statement of Facts:

- The inspector is to maintain and report all times associated with the custody transfer. Following is an example of the minimum times required:

- Vessel Arrived at Pilot Station
- Pilot Onboard
- Vessel Underway to Berth
- NOR Tendered
- Shore-tank(s) Measured and Sampled
- 1st Line Ashore
- Vessel Allfast
- Gangway Down
- NOR Accepted
- Inspector(s) Onboard
- Key Meeting Held
- Commenced Cargo/Deck Inspection
- Completed Cargo/Deck Inspection
- Hose(s) Connected (State diameter of hoses/arms used)
- Cargo Calculations Completed
- Commenced Loading/Discharge

Gunvor Independent Inspection Requirements

Time Log / Statement of Facts, cont:

- Shut Down (list all shut downs and the reason for each)
- Resumed Loading/Discharge
- Completed Loading/Discharge
- Commenced Cargo/Deck Inspection
- Completed Cargo/Deck Inspection
- Hose(s) Disconnected
- Completed Cargo Calculations
- Shore-tank(s) Measured and Sampled
- Vessel Released
- Vessel Sailed

- In addition to the above, please list any other occurrences which may have impacted the total time required to complete the custody transfer. An example of same = "Vessel Commenced Stripping", etc.

Gunvor Independent Inspection Requirements

Laboratory Testing:

- In most cases, testing of the custody transfer sample is to be carried out by the Independent Inspector in the Inspection Company's local laboratory. However, it is understood that in many International locations the Inspection Companies do not have laboratory capabilities. In these cases the Custody Transfer Quality may be based on "submitted" test results from the supplier and/or testing carried out at the supplier's/refinery laboratory which is "witnessed" by the independent inspector. The Gunvor Inspection Nomination will state the terms of the Sales Contract as to what testing is required and who is to perform the actual testing. The following procedures address each of these scenarios:

- **Testing at Independent Inspector Laboratory:**

- The official custody transfer sample to be tested will be identified in the Gunvor Inspection Nomination. In most cases it will be as follows:

- Loadings = A Composite Sample of the delivery shore-tank made up of equal parts of the level samples or a Volumetric/Weighted Composite Sample made from samples of multiple shore-tanks to be used for the loading. In the case of the latter, proportionate volumes of each tank should be used based on anticipated delivery quantities of each tank.

- Discharges = A Volumetric/Weighted Composite Sample based on individual vessel compartment samples. These samples are to be mixed proportionately based on actual quantities of cargo in each compartment.

- Sample Preparation: The Official "Composite Sample" is to be created in the controlled environment of the laboratory and never onboard the vessel or in the field by the Field Inspector.

- A sufficient amount of composite sample should be created to allow full testing while leaving an ample amount to be retained. Additional or Recheck testing may be required at a later date on this sample.

Gunvor Independent Inspection Requirements

Laboratory Testing, cont:

- Testing Capabilities – The Independent Inspection Laboratory is to review the Gunvor Inspection Nomination in detail upon receipt of same. Ensure that all tests outlined in the nomination can be performed per the test method dictated in your local lab. If a given test or tests cannot be performed locally or if an alternate test method must be used, notify Gunvor immediately. Options will be addressed at that time. Address the option to send a portion of the sample to a “Sister” Lab within your organization who can perform the test(s) in question. Advise what the sample shipping time and testing turn-around time will be should this option be exercised.
- All tests must be performed in accordance with the appropriate ASTM/IP/EN Test Method. “Ad Hoc” or “Abbreviated” Testing is not to be used.
- Result Reporting – In the case where Gunvor is the seller/owner of the cargo, all test results should first be reported to Gunvor. After review of the findings Gunvor will give the approval to release the results to the other trading partners involved in the custody transfer.
- The Independent Inspection Test Report should clearly show the result obtained for each test and the “Minimum / Maximum” Specification for that test.
- For “out of specification” test results, recheck testing must be performed promptly. It is recommended that if available, a different piece of testing apparatus be used for the retest and / or a different lab tech/chemist/operator perform the recheck testing versus the original operator.
- If recheck testing still reveals an out of specification result, notify Gunvor immediately and options will be addressed. Said options may include drawing new samples, making a new composite, perform the testing on the individual level samples that were used to create the composite, etc.
- All samples used in the testing process should be sealed after testing and retained by the Independent Inspector for a minimum period of 60 Days.

Gunvor Independent Inspection Requirements

Laboratory Testing, cont:

- **Testing at Supplier's/Refinery Laboratory:**
- If testing is carried out at the supplier's lab and "witnessed" by the Independent Inspector, only qualified laboratory chemists or lab technicians should be used for this service. It is not acceptable to have a "Field Inspector" witness laboratory testing.
- If Witnessed or Submitted Test Results are used to create the Independent Inspector's COA (Certificate of Analysis), a note must appear on the COA stating this. The note should clearly depict that testing was "submitted" and not performed by the Independent Inspector. The name and location of the lab who actually performed the testing should be shown on this document also.
- In the event that submitted or witnessed test results are used to govern the custody transfer, the Independent Inspector is to obtain and retain a portion of the sample used for testing from the outside laboratory. This sample should be retained by the Independent Inspector for a period of 60 Days Minimum.

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats:

- General Notes Concerning Sailing Wires / Inspection Reports:

- Final Sailing Wires should be sent to Gunvor promptly after completion of the custody transfer (generally one (1) business day or less).

- If the final reporting is delayed beyond this period, Gunvor is to be notified with the expected time/date the report will be issued and the reason for the delay.

- It is understood that in certain locations the independent inspector “confirms” quantities with the shore facility / refinery before releasing final numbers. This should not cause delays in issuing final reports and the inspector is reminded that their numbers are the official binding numbers and not those of the shore facility.

- Should a discrepancy exist, Gunvor is to be notified immediately of the reason for the discrepancy, what is being done to investigate and correct the discrepancy and when final numbers will be released.

- Under no circumstances should the inspector change or alter their findings to match those of the shore facility unless a mistake by the inspector is proven. In that case Gunvor should receive documentation (ie: Tank Calibration Tables, Raw Data Differences, etc.) to verify the proposed changes. Only after review of this documentation will Gunvor approve or rebut said changes.

- If an investigation is required to determine reasons for a cargo loss or differences if quantities found between the inspector and shore facility, a “Preliminary” Sailing Wire should be sent to Gunvor outlining the quantities found at that point. This report should clearly state: “Preliminary Report”, “Quantities Unconfirmed”.

- Once quantities are agreed with all parties involved, a final report should be sent promptly. This report should state “Final Report”, “Confirmed Quantities”.

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats, cont:

- Following are Reporting Formats that address various Product Groups as well as required information based on the size of a quantity discrepancy. Every effort should be made by the inspector to follow these formats when performing work for Gunvor: (all quantities should be expressed in GSV)

- **Simple Format – Products Loading** (Use this format when ship/shore quantity differences are less than 0.20%):

1) Quantity Section:

- Shore Delivered/Bill of Lading -----
- Ship After Loading -----
- Ship OBQ -----
- Ship Received -----
- VEF -----
- Ship Received x VEF -----
- Difference Ship x VEF / Shore -----
- Difference (percentage) -----

2) Time Log: (Abbreviated)

- Vessel Allfast -----
- NOR Tendered -----
- NOR Accepted -----
- Hose(s) Connected -----
- Commenced Loading -----
- Completed Loading -----
- Hose(s) Disconnected -----

3) Quality Results:

- (list all test descriptions and results) -----

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats, cont:

- **Simple Format – Products Discharge** – (Use this format when ship/shore quantity differences are less than 0.20%):

1) Quantity Section:

- Shore Received -----
- Ship Arrival -----
- ROB -----
- Ship Delivered -----
- VEF -----
- Ship Delivered x VEF -----
- Difference Ship x VEF / Shore -----
- Difference (Percentage) -----

2) Time Log: (Abbreviated)

- Vessel Allfast -----
- NOR Tendered -----
- NOR Accepted -----
- Hose(s) Connected -----
- Commenced Discharge -----
- Completed Discharge -----
- Hose(s) Disconnected -----

3) Quality Results:

- (list all test descriptions and results) -----

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats, cont:

- **Detailed Format – Product Loadings** - (use this format when ship / shore quantity differences exceed 0.20%):

1) Quantity Section:

- Shore Delivered -----
- Ship After Loading -----
- Ship OBQ -----
- Ship Received -----
- VEF -----
- Ship Received x VEF -----
- Difference Ship x VEF / Shore -----
- Difference (percentage) -----

2) Time Log (list all times per page 17/18)

3) Quality Results:

- List all test descriptions and results -----

4) Inspector Notes / Loss Investigation:

- Describe factors which may have contributed to the loss
- List LOP's (Letters of Protest) issued to the Ship and/or Shore Facility
- Explain methods used by inspector to investigate the loss
- Attach a full copy of the Field Report including all raw data, gauge books, inspector's notes and copies of ship and shore facility paperwork

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats, cont:

- **Detailed Format – Product Discharge** - (use this format when ship / shore quantity differences exceed 0.20%):

1) Quantity Section:

- Shore Received -----
- Ship Arrival -----
- Ship ROB -----
- Ship Delivered -----
- VEF -----
- Ship Delivered x VEF -----
- Difference Ship x VEF / Shore -----
- Difference (percentage) -----

2) Time Log (list all times per page 17/18)

3) Quality Results:

- List all test descriptions and results -----

4) Inspector Notes / Loss Investigation:

- Describe factors which may have contributed to the loss
- List LOP's (Letters of Protest) issued to the Ship and/or Shore Facility
- Explain methods used by inspector to investigate the loss
- Attach a full copy of the Field Report including all raw data, gauge books, inspector's notes and copies of ship and shore facility paperwork

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats, cont:

- Crude Oil Loadings

1) Quantity Section:

- Shore Delivered (GSV) -----
- Vessel After Loading (GSV) -----
- Vessel OBQ Before Loading -----
- Vessel Received (GSV) -----
- VEF -----
- Vessel Received x VEF (GSV) -----
- Difference Vessel x VEF/Shore (GSV) -----
- Difference (Percentage) -----
- S & W Result (Percentage) -----
- S & W Quantity -----
- Shore Delivered (NSV) -----
- Free Water Delivered from Shore-tanks -----
- Free Water Received on Vessel -----
- Free Water Difference (Shore/Ship) -----

2) Time Log (list all times per page 17/18)

3) Quality Results (list all test descriptions and results)

4) Inspector Notes:

- Describe the Sample Source for S & W Testing (Shore-tank Samples, Ship's Composite After Loading, Auto In-Line Sampler, etc.)
- List any LOP's issued during loading

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats, cont:

- Crude Oil Discharge

5) Quantity Section:

- Shore Received (GSV) -----
- Vessel Before Discharge (GSV) -----
- Vessel ROB After Discharge -----
- Vessel Delivered (GSV) -----
- VEF -----
- Vessel Delivered x VEF (GSV) -----
- Difference Vessel x VEF/Shore (GSV) -----
- Difference (Percentage) -----
- S & W Result (Percentage) -----
- S & W Quantity -----
- Shore Received (NSV) -----
- Free Water Delivered from Vessel -----
- Free Water Received in Shore-tanks -----
- Free Water Difference (Ship/Shore) -----

6) Time Log (list all times per page 17/18)

7) Quality Results (list all test descriptions and results)

8) Inspector Notes:

- Describe the Sample Source for S & W Testing (Shore-tank Samples After Discharge, Ship's Composite Before Discharge, Auto In-Line Sampler, etc.)
- List any LOP's issued during Discharge

Gunvor Independent Inspection Requirements

Recommended Inspection Report / Sailing Wire Formats, cont:

VAR (Voyage Analysis Report) – Discharge Inspector Only (All Grades)

- This report is required for all movements where Gunvor is the “Charterer” of the vessel and/or the “Buyer” at loading and “Seller” at Disport.
- This report is to be sent to **Gunvor only** and information pertaining to the loading is not to be given to/shared with the disport shore facility or disport loss control representatives without advance written permission from Gunvor.
- Load-port information (Quantities / Quality) should be obtained by the disport inspector by retrieving copies of all load documents from the vessel. If a sister branch of your company performed the Load Inspection, please secure copies of their loading report directly.

VAR:

- Bill of Lading (GSV) -----
- Out-turn (GSV) -----
- Gain / Loss (GSV) -----
- Gain / Loss (Percentage) -----

- Bill of Lading (NSV – Crude Only) -----
- Out-turn (NSV – Crude Only) -----
- Gain / Loss (NSV) -----
- Gain / Loss (Percentage) -----

- Vessel After Loading (GSV) -----
- Vessel Before Discharge (GSV) -----
- In-transit Gain / Loss -----

- OBQ Before Loading -----
- ROB After Discharge -----
- Difference -----

Gunvor Independent Inspection Requirements

VAR (Voyage Analysis), cont:

- Free Water Delivered (loading) -----
- Free Water Received (disport) -----
- Difference -----

- S & W % (Crude only – loading) -----
- S & W % (Crude only – disport) -----
- Difference -----

- S & W Quantity (Crude only – loading) -----
- S & W Quantity (Crude only – disport) -----
- Difference -----

- Disport Inspector Notes: (If Loss exceeds 0.20%)

- Explain any factors which may have contributed to the shore to shore loss

- Attach copies of all Disport Field Reports including: raw data, gauge books, inspector’s notes, LOP’s issued, etc. Also attach copies of all load documents are received from the vessel.

